

THE EDUCATIONAL TRAINING OF ARCHITECTS. By LEOPOLD EIDLITZ.

Read at the General Meeting of the Royal Institute of British Architects, 1st March 1897.

DURING the last half of the present century the questions "How are architects to be educated?" and "Are we ever to have a new style?" have been prolific sources of discussion. The answers to the first of these questions vary between the two extremes—"Architects shall not be educated at all" and "They shall be taught to know everything"; and to the second, that "We shall probably never have a new style, but such a thing may happen in the course of time"—a long time. These discussions are carried on with mutual forbearance and good feeling, but without any other result than an expression of opinion by the majority of the disputants, that students of architecture shall learn something of the technique of building, if this can be done without the suppression of inherent genius. Genius in this case means a lively poetic imagination, capable of remembering, selecting, and combining existing forms into a whole, which shall be picturesque. It has been observed by practical architects that an extended mathematical and scientific training breeds able constructors (engineers), but is detrimental to the artistic perceptions of the students. Existing forms may be repeated or combined by human imagination, but new forms can result only from new functions logically developed. A musician may perform, with precision and feeling, existing compositions, but in order to compose new music it requires something more than a repetition or combination of existing themes. The basis of musical composition is the knowledge of the nature of sound, and of possible combinations of it which shall be harmonious and expressive. This knowledge is purely mathematical.

Up to the thirteenth century, architects were builders who arrived at progressive methods of construction, mainly by practical experiment, the laboured results of which were stored up as rules-of-thumb by guilds and individuals, and modelling and decoration were mainly matters of feeling, but of the feeling of men who thoroughly knew their methods of construction. The guilds and their rules are past and gone, but during the last century the science of mechanics has been developed. This science enables us to compute with precision the strains caused in all combinations of matter which have served, or may hereafter serve, to form constructional elements. To illustrate briefly: We know, a certain distribution of weights being given, which is to be sustained between two points of support, what is the line of pressure caused by these weights, hence what the form of the arch to sustain them with the least amount of material. Or, the form of an arch being given, what is the ideal distribution of loads which corresponds accurately to its resistance? Or, again, the form of an arch being given, which

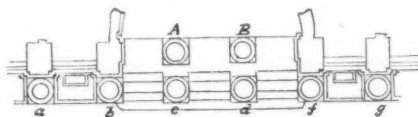
we know *not* to correspond with the distribution of its loads, what will be the magnitude of the strains produced in any part of it, and how are these strains to be resisted. We know exactly what is the lateral pressure of a given arch, and what is the stability of an abutment needed to resist it. We can compute the transverse strength of a beam or a lintel, the bending moment of a pillar, or the deflection of either, under loads so small that it cannot be measured. Now, we are all ready to admit that this knowledge is useful, and perhaps necessary to the student of architecture, to enable him to construct buildings that shall be stable and enduring; but many of us doubt that it has anything to do with architecture as a fine art, which means with the composition of architectural monuments which shall be beautiful to look at, and expressive of their purpose and meaning.

I presume that all architects agree that form, modelling, and decoration constitute the elements of beauty and expression, and that of these *form* is the most important. If we imagine every piece of sculpture, carved decoration, and moulding removed, say, from the Cathedral at Amiens, so that nothing remains but the bulk of piers, arches, vaults, and buttresses, the ruin will still express a Christian monument of great beauty. Now, the ecclesiastical expression is owing to what in music would be called the *motif*, which is Christian in character, lofty in its conception for a house of God, and in the *grouping* of its parts, which designate worship in the chevet, the presence of officiating priests in the transept, the people in the nave, the aisles with their processions, chapels, and confessionals; while harmony is certainly due to a just and accurate treatment of structural parts and their mechanical value, which is determined by local strains. In music, neglect of a strict mathematical relation of sounds results in discord. So, in architecture, harmony of form can be attained only by a strict observance of the mathematical relation of strains.

Harmony of strain means that stress should be always resisted by a proportionate amount of material, no more, no less. This does not mean that there should be no more material used than is absolutely necessary to perform a given amount of mechanical work, such, for instance, as we consider proper in economic structures, factories, warehouses, tenements, &c.; but whatever the amount of material to be used in a given architectural monument, which, in the opinion of the architect, is commensurate to its character of stability, dignity, and elegance, shall be proportionate to actual strains throughout the whole design. To be explicit, each building material sustains a certain amount of strain at the breaking point. The actual strain permitted in any structure in practice is but a fraction of the ultimate strain of the material at the breaking point. This fraction is known as the factor of safety, and should, for the same material, vary in different buildings in accordance with their dignity. The architect may use one factor of safety for a school-house, another for a library, and yet another for a church. The factor of safety so chosen becomes the keynote of his design, and a constant reference to it insures harmony. Factors of safety vary with the different materials, and more or less depend on limits of elasticity, methods of construction, probable effects of the weather, corrosion, &c. Strain is the sum of weight, its direction, and resulting bending moments.

It appears from the above that the greater the ultimate resistance of the material, the greater is the admissible maximum strain, hence the more elegant the structural forms. It occurs that in the use of modern rolled iron, form becomes attenuated far beyond the limits of the forms the architect is familiar with. Mr. Ruskin exclaims, "There is no law, no principle based upon past practice, which may not be overthrown in a moment by the arising of a *new condition*, or the invention of a *new material*." We must answer this despondency by stating that there is still the law of mechanics which cannot be overthrown by new conditions or new materials.

The impression prevails that the masses of architectural monuments are far greater than those which would be required by scientific construction. While this is true in some instances, in many more the reverse is also true. An example of an existing building recently erected may serve to illustrate conditions of gross discord in the formation of architectural masses. *A, B*, and *a, b, c, d, f, g*, are granite columns three feet in diameter and of equal length; *a, b, c, d, f, g*, support a portico some thirty-five feet high, while *A, B*, support the front wall of the main building, which is over 300 feet high. The shafts of the latter columns, moreover, consist of two pieces vertically joined. The resistance to a vertical load of column of the length and diameter in question is reduced in a ratio of from five to three by a vertical division as described. The actual weight upon each of the columns under the main building is 480,000 lb., and that of each of the columns under the portico is 40,000 lb. It seems clear, therefore, that the author of this building was entirely oblivious of the fact that harmonious relations of the masses must be determined by relative strains. What did occur was that the main building was constructed of an iron frame, housed in a stone envelope; and as the form and colour of the iron posts which support the front did not please the architect, he enclosed them in two pieces of granite, convex on the outside and concave on the inside, and converted the iron posts into stone columns—a form of support known to him in Greek and Renaissance architecture.



It may be asked here, and doubtless many a respectable member of our profession would ask, what the author could have done with an ugly iron or steel pillar riveted up of rolled material. Without discussing that question at this time—although it may be asserted with confidence that a post of that description is not at all outside the pale of æsthetic possibilities—it may be suggested that a cast bronze column was perfectly practicable, and so was a granite column of sufficient diameter to carry the load. What the architect had in mind, however, was not the question of mechanical work to be done, nor the question of relative strains and an harmonious architectural development of forms, but the beauties of the Greek portico, which must be preserved in spite of new conditions and the invention of new material. Of course, no new style of architecture can be expected when new conditions, such as a twenty-five-storey office building—or the invention of a new material, such as rolled steel—are referred to the Greek portico, instead of to the law of gravitation.

A great stumbling-block to the student of architecture is the constant and exclusive reading of its history, which is tacitly presented by schools, and avowedly accepted by students, as a system of building which serves all the purposes of a philosophy—or a science and art—competent to teach building scientifically and artistically under conditions which never occurred in the history of the past. The mathematical training in modern schools and universities is usually sufficient to enable the student to devise methods of construction and, when devised, to compute with accuracy resulting strains. Students who then enter an architectural course are turned over to a special teacher of architecture, who tells them to design buildings of any kind—from a storehouse to a cathedral—not in accordance with their acquired knowledge of mechanics, but in accordance with methods pursued by the Greeks, the Romans, &c., who were not at all familiar with the science of building as now understood, but who constructed merely in accordance with their practical experience. For further information the student is referred to *Art History*. Now, the Greeks, the Romans, and the master-builders of the Middle Ages, though not scientific in the modern sense, understood form, because they practically knew the mechanical function of structural elements, and had a realising practical

sense of the relation of masses, hence also of the form, modelling, and decoration of these masses.

The modern student of architecture has no experience in building, and, when he enters the academic course, discards from his mind his previous scientific attainment, which never existed in the shape of forms, but merely in an aggregation of mathematical reasonings. He is not taught how to refer to that reasoning in developing forms, but, instead, is asked to study forms in the abstract as presented in history. The system of the *École des Beaux-Arts*, which is imitated in many schools outside of France, is utterly subversive of possible logical architecture. Students are required to prepare sketches, often of important architectural monuments, in from six to sixteen hours. By rules of the school, these sketches may be measurably foggy, so long as the finally completed drawings can be construed to be somehow indicated in the original sketch; this means that the process is a matter of composition of form, and not a rational development. Criticism of these designs by teachers admits transgression against good construction as comparatively pardonable, but insists on observance of traditional treatment of form as imperative.

The study of architectural history (more especially if perused critically) is doubtless beneficial to the architect, but should be postponed for a post-graduate course, or should be left for private reading after the academic course is completed. A future text-book of architecture for universities, polytechnic schools, and academies of the art of architecture will doubtless bear the title—*The Theory, Practice, and Art of Building*. This text-book would assume the student to have attained a mathematical training sufficient to read with comfort, and refer to with ease, say, Rankine's *Applied Mechanics*, or any other work equivalent to it, at least as far as statics are concerned. It would contain essays on the subject of modelling (moulding) structural parts, with reference to mechanical work done and the strength and elegance with which it is to be done, when considered in connection with the dignity of various buildings, and how modelling is affected by the nature of the material used. Also an essay on carved ornament and colour-decoration, and their relation to mechanical function, the character of the structure, and the nature of the material used. All this would be illustrated with diagrams and decorative designs, selected from existing sources, composed anew from natural objects, conventionalised in accordance with the nature of the material. Then there would follow the architectural scales, which, like the scales in music, would serve to train the student preparatory to the work of actual composition. What is here meant by architectural scales may be best illustrated by one or more examples, for instance: Given a pillar of a certain length, and the load it supports in pounds, what will be its sectional area, and what its form, modelling, carved ornament, and colour decoration (if any) in a warehouse, a public school, a library, a court-house, and a parish church, when the pillar is made of wood, cast iron, wrought iron, bronze, brick, sand-stone, marble, or granite? The text-book would answer these questions, and illustrate the answers by drawings and diagrams. It would state how variations of treatment would accrue by reason of difference in the length of the pillar; also how pillars of similar nature have been treated in notable monuments of the past, and discuss the merit of such treatment, and point out its material defects. Wall piers considered as pillars would be treated in the same way. Then would follow the consideration of braces, capitals, and corbels. Further, that of lintels, arches, groins, and cupolas, and the resulting lateral pressures and abutments; and also of roofs, stairs, and incidental structural elements.

Assuming the architectural scales to comprise the first part of the text-book, the second part will treat of the construction of single cells, and the combination of these into piles. The students would attend lectures on the *rationale* of structural elements and composition,

but would devote most of their time to drawing structural parts, and finally entire buildings and monuments, not by copying from the text-book, but by an individual treatment of the subjects contained therein under the guidance of a professor and his assistant or assistants. The latter would see to it that adherence to strain is strictly pursued. By this process, students would in their work be corrected and helped daily, and would progressively acquire a habit of referring design to building, and its mechanical import. That monuments thus conceived and designed will be expressive of their meaning, and the individuality of their author, cannot be doubted; nor that they will be harmonious in themselves, and will vary from the forms of the past in the degree as new wants, new material, new methods of construction vary and excel those handed down to us in history.

When a natural organism decays and dies, it still exists in its elements, though not in its original form. These elements under different environments combine again into new organic forms of different functions. Science and art obey a similar law. Principles established by experience continue to live as accepted truths, when the forms of artificial organisms which they originally developed have ceased to be fitting or useful to human needs, more especially when those principles first crudely announced have become accurately determined by quantitative analysis. The cross-bow and modern rifle, the spinning-wheel and the present spinning-machines, and the ancient galley and the armoured steamer, all serve as practical illustrations of the above. Architecture alone, of all human pursuits, retains obsolete forms and neglects underlying principles and organic laws. It must be remembered, however, that this was not the case prior to the fourteenth century. Five hundred years of decrepitude leads thinking minds to question a possible resuscitation; and when now and then such a possibility is seriously contemplated, we talk of centuries and generations, because past progress has consumed such periods of time. But when we consider the great strides of the present century, owing to the knowledge and application of positive scientific methods—the metamorphosis of Japan, for instance, within the last generation, purely by the acknowledgment and practical acceptance of these methods—we must come to the conclusion that a period of one generation is quite sufficient to initiate renewed rapid progress in architectural art, always provided that we are ready and willing to refer it to its true and fundamental principles, and to teach it rationally.

DISCUSSION OF MR. EIDLITZ'S PAPER.

The President, Professor AITCHISON, A.R.A., in the Chair.

MR. JOHN SLATER [F.], B.A., who, in the absence of the author, had undertaken to read the Paper to the Meeting, made the following introductory remarks:—Mr. President and Gentlemen, I find some difficulty in explaining my position here as reading this Paper. When asked a few days ago if I would read Mr. Eidlitz's Paper to the Meeting, I said I had not seen the Paper, and knew nothing at all about it; so in consenting to be the foster-father to the Paper, I must not be understood to adopt the bantling as my own. The Paper is characteristically and essentially American. We know that the Americans are strictly utilitarian people: they have rather a contempt for tradition and traditional usage, and have adopted methods of their own with regard to building; and I am bound to say that with a great deal of what is in this Paper I myself could not personally agree. Mr. Eidlitz is an architect practising in

New York, and the author of a book on *The Nature and Function of Art*, which is in the Institute Library. I have only been able just to glance at the work: it is rather a large volume, and contains much suggestive matter. There are points also in this Paper which themselves are very suggestive. But when an architect asks people to throw over tradition altogether, and believes that the study of old work is of very little use to the architectural student, and ought to be put off till after his student days, I am afraid a great many people in England will hardly agree with him. The main point made by Mr. Eidlitz is that form in architecture should always be connected with a proper relation of points of support to the strain of weights they have to carry. No doubt a great truth underlies this statement, and I remember that some years ago Mr. Statham read a Paper before the Royal Institution in

which he very happily commented upon the lack of this element in construction with reference to one of our bridges, where there was a huge projecting pier, of which I think he gave a diagram, supporting a young lady with a parasol! There is no doubt a great truth in the fact that your points of support ought to be correlated to the weights they have to bear. My own opinion is that the disappointing feature of American architecture is largely due to the fact that the huge, lofty buildings erected in the States are constructed solely of iron; the iron supports are cased with stone to look like stone piers; and we have a building, thirteen or fourteen storeys high, apparently resting upon a stone pier, which it is perfectly evident is not sufficient to carry it. I hold most strongly that the supports of a building ought not only to be actually, but also apparently proportional to the weights they have to carry, or we cannot derive any satisfaction from the aspect of the building. I am afraid, however, that if we were to adopt, as the text-book of our architectural studies or our architectural education, the mere mechanical formula of proportion of weight to strains, we should not clothe the dead bones of building with any architectural life at all.

[The Paper was then read, and the following discussion ensued:]

MR. H. HEATHCOTE STATHAM [F].—Sir, I shall be happy to propose a vote of thanks to Mr. Eidlitz for his Paper. I have already some knowledge of his writings, and have read them with great interest. I have listened to this short Paper with a mingled feeling of interest and something of melancholy, as to the last attempt made to found a new and perfect theory for evolving a new style of architecture. There are some valuable suggestions in the Paper, but they will, I fear, go the way of all the others, so far as arriving at any practical result. There is some value in his suggestion for an architectural scale, that is, for giving pupils a problem of this kind: Given a pier of a certain length, and given its supports in pounds, what should be its sectional area and its width? You can go as far as that. Then he goes on to say what should be its moulding and its carved ornament; but that, it appears to me, has nothing to do with its practical power of strain at all. It struck me particularly that this Paper repeats again, what I call the old fallacy that we have heard again and again during the last twenty years or so, that we should endeavour to carry out architecture as people carried it out before the fourteenth century, without reference to precedent. It would be well if we could once for all recognise the fact that that is absolutely impossible; it may be right from a philosophical point of view, but it cannot be done. If we could catch a generation of architectural students, take possession of them as soon as they are born, and keep them out of sight of any buildings, then

send them to a desert island, and keep them away from a knowledge of any books, or history, and tell them to construct buildings to suit their purpose in the best way they can, I suppose they might then evolve something new! But we are not in the position of people before the ages of printing. The people who built the fourteenth-century cathedrals, the people who evolved Gothic out of round-arch Gothic, worked in a spontaneous way, and without reference to other studies, simply because they knew of nothing else; they did not travel, or hardly at all, and were not acquainted with other places. Now here we have before us, in books, photographs, and by travel, a knowledge of everything in other countries, and of everything that went before us. Even the Romans had no real knowledge of Greek architecture; Vitruvius wrote about Greek architecture, but it is improbable that he ever visited Athens. There was a reason, then, for individual styles being naturally evolved, in a position of things which has gone for ever, and which, I say, never can revive; and I think the sooner people recognise that the better, because then they will give over pursuing this kind of phantom of a return to a spontaneous architectural style, without reference to anything that has preceded it. As soon as people have any knowledge of styles, the human mind is so constituted that they must be affected by it. They cannot help it. Mr. Eidlitz in his Paper has said some hard things about the system of the *École des Beaux-Arts*, which is said to be subversive of true architecture. The system may be rather conventional, but I should like to recall this fact, that one of our ablest and most thoughtful art critics, the late P. G. Hamerton, who spent many years in France, left it on record, as his decisive conviction, that architecture is more a living art in France at this moment than in any other country in the world. That opinion is the more remarkable as coming from Hamerton because he was not an architect; he had no particular prejudices of education, and as an art critic was a man remarkably independent in feeling; he did not move in ordinary grooves at all; and that is the view which modern French architecture at its best presented to a very thoughtful and enthusiastic lover of art. There is, I think, a great deal of truth in that. For some years past I have made a practice of looking through the architecture at the Salon every year, and though there is a great deal of mere school work—no doubt students' drawings—there is much that is decidedly original and thoughtful in the new buildings growing up there, as well as in and around Paris; so that one cannot consider that the teaching given in the *École des Beaux-Arts* is entirely a failure, or has led to merely conventional architecture without any ideas in it. Particularly last year I noticed that the Gold Medal for Architecture at the Salon was given, not to a piece of school architecture at

all, but to an absolutely practical technical building, a great set of drawings for the Central Dépôt of the Post and Telegraph Department, by M. Scellier de Gisors. That shows that in France they are carrying out what is sensible in the principles of this Paper; they are giving a man the Gold Medal for having shown admirable technical treatment of a purely technical building, without anything of what one may call academical art in it at all. So that I think the reproaches cast at the École des Beaux-Arts are sterner than they need be, and that it has not brought about all the unhappy results Mr. Eidlitz is inclined to suppose. I agree with Mr. Eidlitz so far as thinking that it is a great advantage to students to direct their minds to the consideration of the strains their work has to meet, and to design in relation to that; but I do not think it is of any use to try to shut them out from any architectural precedents; because, if shut out from it in the school, they will get it out of doors; and if one tries to keep them from all books and knowledge of architectural history, they will have nothing to go upon as a basis for designing at all. No one generation of men can absolutely originate a style. It always depends—it always has in former times—on what has gone before; and as long as human nature remains the same it will continue to be so. I have, however, great pleasure in proposing a vote of thanks for what, though short, is a very thoughtful Paper, and containing some useful suggestions.

THE HONORARY SECRETARY.—I have much pleasure, Sir, in seconding the vote of thanks to Mr. Eidlitz for his interesting Paper. I think the teaching of the École des Beaux-Arts, which is essentially that of classical architecture, and therefore means low buildings some two or three storeys in height, is really subversive of the architectural problem that Mr. Eidlitz wishes to work out—a problem, that is to say, of constructing an architectural building of, say, from fifteen to twenty-two storeys high. That, it seems to me, is the sole architectural problem in this world that he thinks worthy of solution. In a building in America twenty-two storeys high, naturally it comes to a construction of steel or iron, which I think I have heard you say, Sir, is the architecture of the period, and which we ought to study at the present time.

MR. WILLIAM WOODWARD [A.].—Sir, I wish to confine myself to one practical and intelligible phase of this subject, which was very well indeed brought out by Mr. Slater in his introductory remarks. I gather Mr. Slater's views to be these, that it is wrong to encase a pier or column of iron with stone or other material. That brings us to this: Supposing there is a superstructure to be carried, Mr. Slater says that not only should the column or pier carry that superstructure, but it should appear to carry it. In other words, that

supposing with a cast-iron stanchion encased in stone you can carry a superstructure with a diameter of 2 feet 6 inches, Mr. Slater's theory, carried into practice, would mean, speaking roughly of course, a pier or column 5 feet in diameter. That, in the case of a commercial building, would be a pier which would not be tolerated by the individual who had to pay for the building; and it would be ignoring the fact that in the smaller diameter we take advantage of material that has come to us since the thirteenth century. It is, to my mind, of no avail to say that you do not find the stanchion of iron-work employed in the thirteenth century. The reason is that the thirteenth-century builders did not know of the existence—in that form at all events—of the vertical supports which we know to-day. I think it is a perfectly defensible proposition that an architect should take advantage of a cast-iron stanchion. I say that it does not interfere with legitimate architecture that he may employ such a stanchion, and may enclose it with terra-cotta or stone, and may therefore reduce the area of support. So long as that column is in proportion, it is, I contend, quite a defensible design. I have a case in which I have done it myself, and in this way. I wanted to have a gauged red-brick column. The diameter of that column as desired would not have been sufficient unless a cast-iron stanchion had been introduced into that column; that cast-iron stanchion has been introduced; it has been entirely covered up; and I have been enabled to get my red-brick column, which otherwise could not have been got. One of the objections raised against the Tower Bridge is that the employment of iron there encased in stone is an indefensible design. I think it thoroughly defensible. The architect has really taken advantage of the material at his disposal; and, so long as the work is in proportion, I maintain that its employment in that form is a thoroughly defensible and excellent form of design.

MR. C. H. BRODIE [A.] suggested that it would be interesting to add a note to Mr. Cates's remarks [p. 220] giving the ages of those who had won the Soane Medallion during the last ten years.*

THE PRESIDENT.—Some seven years ago I happened to pick up Mr. Eidlitz's book on *The Nature and Function of Art, more especially of Architecture*, at an old book-shop, and was struck by its title. I read it through—no small task, I may say, for it is a book of some 500 pages—and I found the author was the only person I have ever come across in my life who had a due belief in the importance of art to mankind. I have

* As no record of the ages of Prize-winners is kept at the Institute, Mr. Brodie's request cannot be complied with; but it would be feasible to give this information against the names of future winners in the Registers published in the KALENDAR.

spoken to a great many artists at various times, but they almost all agree in the modern maxim that art is solely for delight. Now Mr. Eidlitz is of opinion that it is one of the great means of education of the masses; that the sort of vague ideas that they get from it are the only ones that they can possibly get; and, as he says, at present it is thought that we can do without art. But it is just as necessary now, if you want to teach the people, as it was two thousand years ago. That alone is a great charm in the book. I cannot say that I wholly and entirely agree with all his remarks about architecture, and amongst other things I do not agree with his idea that the whole thoughts and practice of architecture can be changed in a generation, or anything like it. Nevertheless, I consider that the Paper we have had to-night is one of the most important Papers ever read in this Institute since I have been a member. One of the great difficulties of architecture is its proportions. Now these proportions no doubt were originally laid down by the early architects as the results of their experience on the strength of materials—I have not the least doubt of that, although I cannot prove it. Well, these proportions have come from being studied, and also from their being so constantly before us, to take a form that is agreeable to our eyes; custom will do that; Mr. Eidlitz in his Paper shows how in this direction one step forward may be taken in architecture. He says you will find that if you take a constant according to the desire that you have to give elegance or solidity to your building, and that if you multiply by that chosen constant every portion according to its stability, its absolute doing the work that it has to do, you will get the proper proportion for each part without any more trouble; and that, in my opinion, is a true and most valuable remark. Mr. Statham's observations about the effect of things past on the minds of the present are certainly perfectly true. I do not think, though I must say I have only read this Paper cursorily, that there is anything in Mr. Eidlitz's Paper to show that he is of a different opinion. I agree with his remarks about the usual study in our own country of what is called historic architecture. As applied now it is not only perfectly useless, but destructive of any kind of progress in the art, for, as Mr. Ruskin remarked, "it is not wanted to be put into a storehouse for use, but into a gallery for study." What, in my opinion, we want to do is to express in the taste of the day the things that are wanted. We want to arrange a building as exactly as possible for the purpose; we want to make it bear what it should bear in each portion; and we want also to take this constant, and, where we want a building to look very strong, to multiply each part by the same constant. We want to give it the ornament necessary to convey to persons of our own age a

view of the use the building is to be put to, and to evoke the emotions this use should engender; and I think all these things are more or less embodied in Mr. Eidlitz's Paper. But there is one point on which I cannot agree with him. He believes that not only may the rough form, but the absolutely finished form, be got by means of those strains; and that, I think, is not the case. Architecture, I think, appeals rather to those human emotions that no mere mechanical method will ever produce. It is the desire of mankind to express something that the mere strains will not of necessity give. But he goes further than that: he thinks that each particular weight to be carried, or strain to be resisted, will give its proper form to the part if it could be properly carried out; and he thinks also that there is some natural concurrence of colour with these. Well, I confess it is beyond me if there is; I have never been able to see it. The only thing I would say about Mr. Statham's remarks is that the Roman, and even the earlier Romanesque, architects were not so absolutely without anything to give them an idea. The Romans got hints from the native architectures of all the countries they conquered. The Romanesque architects had the Roman ruins, and the works of the Byzantines. The Romanesque architects learnt what little they could get from the Roman and Byzantine buildings about them; but this was nothing to what they afterwards achieved, when they had made the tour through Europe, Asia Minor, and Syria. And it will be remembered that it was not till 1291 that the Crusaders were eventually driven out of Acre. Therefore these people had not only a fine opportunity of seeing a great many things that had been done, but they were also in contact, as well as in conflict, with those people who were then the most civilised in the world—the Saracens. They must have seen an immense quantity of their rather ephemeral works; and I believe it was the endeavour to rival, rather than to imitate, them which gave the peculiar character which Gothic, and especially late Gothic, took.

Mr. ARTHUR CATES [*F.*], who had been asked to favour the Institute with a few observations on the subject of Mr. Eidlitz's Paper, sent the following communication, which was read to the Meeting by the Hon. Secretary:—

The educational training of architects, with which the Institute is concerned, is clearly not one in which "they shall be taught to know everything," nor is it one the aim and object of which is to produce the evolution of "a new style," whatever that once much-used phrase may mean. The educational training which is now organised aims at fitting the student for the acquisition of the knowledge necessary for the satisfactory practice of his profession, in developing his natural, artistic, and scientific ability, so that he may apply

both to the expression of his ideas in design and in the realisation of his conceptions. In the complex conditions of the practice of the day the architect must aim at acquiring the power to attain success in designing buildings which shall be convenient and appropriate in arrangement; shall be of stable construction; and shall be of suitable and beautiful design, both as regards masses, form, and detail.

The first studies of the aspirant should be devoted to a mastery of Classic and Mediæval work—intelligently studied, with a thorough acquaintance with form and detail—leaving the Renaissance and later developments to a subsequent period when he can bring to bear on their consideration the knowledge acquired in the first years of his studies. In both periods the sedulous cultivation of the art of accurate and effective delineation, and of sketching detail and ornament, from buildings and from memory, thus bringing eye and hand and brain into harmonious and mutual action, is of the highest importance.

Concurrently with this, the study of the history of the several periods of architectural art is of the greatest value, not as a mere matter of dates and names, but as giving life and interest to the subjects studied, connecting them with the actual social life of the people by whom they were evolved, and with the political, social, and religious influences which controlled their design. These historical studies train the mental and artistic powers, and by giving a keener appreciation of the excellence of excellent things, and of the causes of such excellence, refine the taste and strengthen the judgment.

It has been well said by Professor William R. Ware *—

I cannot help thinking that this discipline is calculated to calm the anxiety of those who fear that too prolonged courses of academic study may enervate the powers, instead of stimulating them, and, as in a hot-bed, bury or burn out all seeds of originality through too rich a culture. I fancy that these fears have in general but little foundation, and that it is not through over-education that talents are lost to the world, and fail to bring increase to their owners, so much as through their lying neglected, or, as sometimes happens, being too carefully tended by their possessor lest their original brightness should be tarnished. Still it is true that in the conduct of life, and especially in the practice of the arts, which is but the finer kind of living, it is the special personal quality, the spark of individuality and originality which lights every man who comes into the world, that has intrinsic value; and though the risk of extinguishing the flame in too strong a draught may be exaggerated, it is not possible to exaggerate the importance of fostering and magnifying it. There is no knowing what fire it may not kindle. If ever you have a new idea, however slight and unimportant it may seem to be, cling to it, cherish it, develop it, and some day you may awaken and find yourself immortal.*

This immortality, if to be one of honour, is not likely to be attained by the study of the suggested

* *The Study of Architectural History at Columbia College.*

"future text-book of architecture for universities, polytechnic schools, and academies of the art of architecture, which will doubtless bear the title, *The Theory, Practice, and Art of Building.*"

It is not easy to comprehend what would be the exact nature of this text-book, which would profess to give the "form, modelling, carved ornament, and colour decoration (if any) for pillars and probably other details in a warehouse, a public school, a library, a courthouse, and a parish church." And out of this text-book are to be evolved monuments that are to be expressive of their meaning and of the individuality of their author.

The "factor of safety," which it appears may vary in different buildings in accordance with their dignity, is apparently the key to this "text-book," from the study of which such excellent results are to be obtained; but surely the first elements of design dictate that the considerations of form, outline, masses, and stability, in both appearance and fact, must be the essentials to be primarily dealt with; and these, as well as the character of the detail and of the ornament, must be governed by the nature of the material to be employed; the skill and talent of the architect are displayed in his artistic and scientific use of such materials, in accordance with their qualities; and in their application to the best advantage for convenience, strength, and beauty:—no "text-book," no "architectural scales," no "combination of single cells into piles," will enable the architect to effect this. His success will depend on his application of the capabilities of the materials he used, and will be the greater as he may have been blessed with the divine inspiration of artistic genius, and have cultivated and developed it by earnest study, of which mechanical and constructive details would not have occupied the most important part.

The Institute has an excellent opportunity to afford encouragement to the study of the means of satisfying new wants, by the use of new materials and new methods of construction, and the more extended application of those materials with the existence of which we are familiar, but of whose capabilities in perhaps unexpected directions we have no appreciation. The Soane Medallion and its accompanying travelling studentship is in the free and uncontrolled disposition of the Institute. At present the only qualification of competitors is that they shall be "British subjects under the age of thirty years," with the result that there is each year a great amount of misdirected and wasted energy on the part of untrained competitors who have entered on design before they have mastered the essential principles which should govern it. By altering the conditions to secure that these principles should have been mastered, and even by securing that the competitors should have had some reasonable training, by making Associateship

or qualification therefor an express condition, the results would certainly be more satisfactory, the cause of the educational training of architects be greatly advanced, while some new developments of design arising out of the application of new materials might possibly arise.

The questions raised by "The Text-book" suggestion were considered a short time ago from a different standpoint by the Committee on Education of the American Institute of Architects, and Professor W. R. Ware, in the Paper above quoted, says in relation thereto:—

The Committee on Education expressed the hope that if the study of the historic styles was systematised and co-ordinated in the schools, "such an effective concentration of intelligent effort might aid in developing a system of architectural form that should be nationally characteristic, and should be more accurately adjusted to the expression of modern American life" than those now in vogue. We do not feel that it very much concerns us to exert ourselves to any such end; we do not see that we have any cause to map out the future, to cast a horoscope, or to attempt to influence events towards issues indicated by any astrology that can be devised. We distrust the science which, in our present state of ignorance, undertakes to foretell or to control the architectural weather. All we can be sure of is that the architecture of the future will be good or bad, noble or ignoble, fair or foul, according to the personal character and professional prowess of the men who have it in hand. All we can undertake to do is, if possible, to inspire the young men who come under our hand with a certain measure of good sense and good taste, teaching

them by precept and the example of history that in art, as in life, temperance and refinement of conduct come from firmness of mind and elevation of spirit, and that these are the only sure means to these ends.

All reasonable men must agree with the conclusions so well expressed by Professor Ware, and be content to await the development which must follow carefully conducted educational training, kept free from mere academic influences, and this Institute need not look further ahead than to continue steadfastly in the course already adopted, and thus eventually secure that all its members shall have had that thorough and systematic artistic, scientific, and practical training, based on a sound general education, which will ensure that the title of architect and membership of the Institute shall imply that its possessor may reasonably be expected to be a reliable and trustworthy adviser on all artistic and practical details, and also a well-educated man, standing at least on a level with the average of his clients in knowledge of all ordinary topics of art and general history, and superior to them in his special and technical knowledge. An architect will then, so far as personal characteristics may permit, in some degree combine the imagination of the artist, the intellectual clearness and precision of the mathematician, and the experience and readiness of the practical man with the culture and refinement of the educated gentleman.

ON THE PROBABLE INFLUENCE OF THE TECHNICAL EDUCATION MOVEMENT UPON THE ARCHITECT AND HIS WORK. By FRANK CAWS [F].*

THIS movement is a sign of our times. Great in its inception, still greater in its development, but greatest of all in its promised fruits. Our profession is also great, very great and noble, in its antiquity and history, distinguished in every age and nation by glorious achievements; but whether its future will eclipse its past will depend on whether it will, or will not, continue to advance, as heretofore, on the crest of the un-resting wave of human progress.

The very name of Architecture proclaims its proud precedence in the order and rank of technical art and work. But this has of late years been strangely overlooked by the promoters of systematic technical education, and it may well be asked by every architect zealous for the dignity of his calling: "How has it come about that, while princes of the blood royal, soldiers, sailors, and professional men of all other sorts have been more or less active in this great movement for technical education, architects have taken scarcely any place, much less the 'arch,' or chief, place in

their counsels?" Thereby hangs a tale, which, for the credit of our profession, had better remain untold. A tale of declension—generation after generation of the race of British architects, ever dwindling in mental capacity, and continually growing feebler in spirit, while simultaneously increasing in numbers, content with the pursuit of artistic trifles, while permitting with little or no protest those majestic works which have rendered our nineteenth century the most wonderful of all the centuries to pass out of their weak hands into those of the distinctly modern race of civil engineers who have succeeded in demonstrating to the admiring world that—Solomon notwithstanding—the battle is to the strong.

But while we must mournfully acknowledge that the architects of this and the seventeenth and eighteenth centuries have themselves to thank for the loss of much prestige which it should have been their glory to win, yet the blame has not been wholly theirs. The chief of the Old World Wisemen, when sick of himself and surfeited with his own philosophy, wrote these words: "God made men upright, but they sought out many inventions." We are left to guess what were the

* Read at the Meeting of the Northern Architectural Association, 3rd February 1897.

inventions which afflicted the jaded brain and wearied the *blasé* soul of Solomon. So far as his own countrymen were concerned, it seems probable these inventions were not of the practically successful type; for when this great Solomon wished to build a palace and a temple most glorious and grand, he found his own subjects too unskilled for such work; nor had he apparently, with all his wisdom, the "technical" skill to teach them. So he engaged a foreign architect and foreign artificers to design and carry out these vast edifices; for that technical education which was the glory of Tyre was then untaught in Jerusalem, where problems of philosophy, morality, and religion seemed to have exercised the hearts and minds of the people, to the exclusion of proficiency in practically useful arts and science.

Perhaps the "inventions" of which Solomon wrote so deprecatingly were of the philosophical rather than practical kind; and possibly had he reigned over the British Isles to-day the King of Wisdom would have been as sarcastic in regard to the old-fashioned "classical" education of the rich men's sons of England as he would have been solicitous for the technical education of the sons and daughters of the middle and working classes. And perhaps he would have discovered in the rank and file of members of the Royal Institute of British Architects some not unworthy Hiram to lead his kingly enterprises and direct them to successful issues. Be that as it may, it is no fancy, but sadly historical fact, that this mighty movement which we call technical education was started in England by a great, good, and wise prince of our own, *by the snubbing of architects*. It was started, too, by the designing and erecting of a vast and beautiful edifice quite different from any great building the world had seen before. And this prince found it necessary to select a man capable of giving effect to his great idea—a man to design that edifice. The architects of England were close to his hand, but he passed them by, and chose instead a "gardener." That prince was "Albert the Good"; that edifice was the Great Exhibition of 1851; and that gardener was Sir Joseph Paxton.

By the opening of that Great Exhibition technical education received its initial impulse in our country, though not then recognised by that name. Eleven years later the second Great Exhibition was opened; and though the Prince Consort, sad to say, died before the opening, he selected the designer of this great 1862 erection also; and again he passed by the architectural profession, and this time chose Captain Fowke, of the Royal Engineers. When asked his reason for so doing, he is reported to have replied, "I find when I want anything out of the ordinary done, if I go to an architect he hums and haws about it; but an engineer gets it done at once."

How often the direction of the first step of a

great career influences more or less the whole aftercourse! And it was quite in accordance with that experience that, in turning thus away from the architects of England at the very outset of his beneficent and magnificent enterprise, the Prince Consort unconsciously discouraged architects from feeling and acting towards the technical education movement, thus initiated so warmly and zealously, as they doubtless would have done had their profession not been so severely snubbed. Certainly there were in those days British architects capable of doing what Paxton and Fowke did as well as they, and probably a great deal better. Indeed, it is notorious that the Crystal Palace as originally designed by Paxton was "a hideous pile of glass packing-cases," when the genius of Sir Charles Barry saved it from the doom of such unmitigated ugliness by suggesting the vaulted form of the nave roof. He also suggested the crowning of that roof with glass domes, which would have greatly added to the beauty of the structure had they been carried out.

Yes, there were giants among the crowd of despised architects whom the Prince ignored; and if proof were needed of their great capacity one building alone would suffice to give it—an edifice which, partly from its situation, but not less from its own architectural excellence, has done more than any other building to make London beautiful—a design which has been freely and fiercely criticised by Ruskin and others, but which, in spite of their scorn, stands "a thing of beauty and a joy for ever." I allude to the Houses of Parliament—in view of which we may gravely question the wisdom of Prince Albert in setting the architects aside. But he was a strong-minded prince, and an amateur architect, who liked rather more of his own way in designing than he would have been likely to get from a first-rate architect. Osborne Palace is a specimen of what he could do when he had his own free hand. He was a German, with German tastes. No British architect, with a soul of his own, would regard the soulless blocks of Osborne, with all their Italian elegance and neatness, without ardently desiring that Nature may so cover with creepers its formal walls, and so garnish its prim towers and façades by beautiful English woods and lawns, as to contribute that romance of which the architecture itself is utterly devoid.

We may judge for ourselves of the Prince's taste in architecture without detracting from the splendour of his great achievement in laying the foundations of the system of technical education which now bids fair to become one of the greatest industrial, artistic, and social reforms of our age. By this achievement the Prince has laid us all under eternal obligation, such as we can never adequately repay by our homage to his memory. But the more we realise his worth, the more

must we lament that he valued at so low an estimate the worthiness of our professional fore-runners to be entrusted with the nation's great new departures in building enterprise, and turned his back on them in the way he did. While we revere his memory, we none the less would honour theirs. And if we look on the Palaces of Westminster and Osborne, on the works of Sir Charles Barry on the one hand, and of Prince Albert on the other, we can form our own conclusions as to who is entitled to the palm of victory in architecture.

There were not wanting British gentlemen in the days of the Prince Consort to challenge his architectural pretensions, and to give the British architect an opportunity of proving his superiority to the Royal German amateur. It is not only in comparing the vaster palace of Westminster with the lesser one at Osborne that the latter suffers by comparison, for many a modern mansion of our fatherland—to say nothing of our older and still grander English homes—would put Osborne Palace in the shade. Even in the Isle of Wight itself, and within a short drive of Osborne, stands the modern mansion called "Apley Towers," which for romantic charm of architectural loveliness and real grandeur, both within and without, makes Osborne seem bald and poor indeed. This noble example of modern Elizabethan was erected by a local squire, who desired to show Prince Albert what British gentlemen and architects could do. The squire did not see his great work completed; but after his death a North-country baronet added the finishing touches.

I mention these things to show that British architects were undeserving of the snub the Prince unfortunately gave them; and to show also that their subsequent lack of prominence in the promotion of the great movement initiated by the Prince Consort was really his fault more than theirs. But, putting all that aside, the time has now arrived when "the dead" past should "bury its dead"; and when we as architects, and at the same time as good citizens, should cease to feel lukewarm towards those great educational movements which Albert the Good, to his everlasting honour, initiated. Already we are, of course, being requisitioned to design the numerous colleges and technical schools which are, happily, being erected throughout the length and breadth of our country; and this fact alone naturally tends to deepen our interest in the movement. But our interest should not be a mere trade or professional one. It should be based on something nobler. We should hail with delight the growing prospect which this movement for technical education affords of tremendous advantages to the thoughtful and eager young self-improvers all over the land. We should watch with intensest interest the action of this new educational plough, as it turns up the virgin soil

of the undeveloped intellect and talent of the British common people; for what riches shall be brought to light, and what genius thus be unearthed—who can tell?

It would seem at first sight as if the establishment of technical schools were an act by this nation of the most pure and undefiled selfishness; for it would appear that the nation looks to these schools as a great means of holding our own in the markets of the world against the ever-growing power of the skilful German and clever American. This of itself is certainly a good practical reason why every Englishman should wish well to technical education, and should aid and promote it by every means in his power. But it would surely not be difficult to show that the movement is a sign of the aspiration of a mighty people for a higher life, tending, as technical education does, to reduce the amount of miserably monotonous drudgery to which the vast multitude of our fellow countrymen and women are doomed; and to increase the sum of their interest and happiness in life, in direct proportion as it teaches each workman and workwoman to understand and appreciate the meaning and the beauty of his or her daily tasks.

Technical education is the means by which the worker is not only taught how to do his work better, but is also led to feel and realise that others are intellectually interested in his work; and that, in fact, there is room for intellect to take pleasure in it. Once let a worker realise that, then a new interest is added, and the work becomes thenceforward less a piece of mere drudgery than it seemed before. The youth whose daily toil is too severe to allow of his attending to anything else while it lasts can in the quiet evening wend his way, when work is done, to the technical school, and meet there with professors and fellow-students who can talk to him about his work, and show him many things about it which he did not know; and also interest him by explaining how his kind of work relates to other kinds, and to other workers; and so enlarge his view and increase his respect for his work, and therefore his respect for himself.

This process of technical education cannot long continue without elevating the tone and character of all those workers who avail themselves of the instruction; so that we may expect a general gain of intelligence, skill, and respectability in all trades and handicrafts. How far this gain may grow, and when and where it will cease growing, we cannot tell. But we may be quite sure of this, that any calling which remains stationary while all others are thus going ahead must soon find itself left hopelessly behind. Therefore if we, as architects, are to retain justly the proud position of masters of the technical arts, which position has from the most ancient times belonged to our profession (as its name, *Architecture*, plainly

implies), we must individually, as masters and as assistants, as pupils and as students, bestir ourselves; or we shall drop out of the great race of intellect and talent which the technical education movement must inevitably, both in the near and far future, more and more accelerate. For if, unhappily, through our supineness the day should ever come when the bricklayer and joiner can excel us in the arts of construction, and when the plumber and hot-water engineer can expose our ignorance of sanitary science, and of hydraulics and hydrostatics, and when the amateur student in the art school can not only eclipse us in drawing, modelling, and painting, but can also draw and design to better purpose than we can, then we must not complain if the world should come to recognise the fact that we are beaten upon all points, and should bid us stand down, so that others worthier of place on the pedestal of architectural reputation may supersede us, men of greater gifts and larger qualifications than ours, who, coming after us, have, very rightly, been preferred before us.

Such a state of things will never overtake us if we, thoroughly alive to the necessities of the situation now induced by this technical education movement, use reasonable assiduity and earnestness, together with proper humility, in equipping ourselves more and more thoroughly for the impending fight, and in keeping our professional qualifications quite up to date. But this involves the disappearance from our ranks of the idler and the dandy, who, in their shortsightedness and contemptible pride, would deem it *infra dig.* to spend their evenings seated side by side in the technical college or art school with the young artisan; for, depend upon it, the architects of the future will be the men who have learnt by such means all that the night-schools can teach them, in addition to the practical and theoretical experience which they have gained by the daily exercise of their profession in the architects' offices, where they are employed as pupils and assistants.

An architectural student who is wishful to make the most of his time, and yet who must keep himself in health by a certain amount of physical exercise, might usefully substitute for a while for his dumbbells and Indian clubs the joiner's saw and plane, and the mason's mallet and chisel, and the blacksmith's hammer, at the technical school, so killing two birds, as it were, with one stone. The architectural student should not, however, expect to become a skilled amateur mechanic, nor should he give to such manual labour time which ought to be consecrated solely to the study of art and science. The youngest students of architecture ought not to give any large part of their leisure to the study of constructional science; for the first subject of a young student's care should be to cultivate art, pure and simple, except such practical studies of construc-

tion which he is sure to encounter in the course of his day's work at the office. Such art as he specially needs, the architectural student can learn under excellent masters in the Central School of Art at Kensington, or in any of its London or provincial branches. He ought not, for the first two years of his pupilage, to use a T-square, straight-edge, or compass at the art school, or anywhere out of office hours. Let him learn, above and before all things, to draw, and then to shade, to paint, to carve, to model in clay; and to do all these things as an artist purely (and not as an architect), and to do them well. No proficiency in the knowledge of constructive science, no dexterousness in the use of level and tape and theodolite out of doors, and of line and rule in the office, will ever atone for a want of competency to do the work of an artist. An architect who cannot draw properly cannot see properly, or think and feel properly. This may seem an absurd statement, but it is most deeply true.

After a youth has been two years absorbing his whole leisure in the passionate pursuit of art, he will, by means of his ordinary day's work in the architect's office, have begun to have an inkling of the necessity of his acquiring structural science. It is better that this should not be forced too suddenly upon him, even by his attendance at the technical schools. Let him grow slowly to realise it, just as the grown man, when the flush of youth is past, has it gradually brought home to him that "life is not all cakes and ale." By forcing too soon on the architectural student the sterner demands of his profession, there is danger of blunting and spoiling his keenest and most sensitive art feelings, which should be encouraged to grow unhindered and unpruned while the brief springtime lasts. No matter if his earlier designs display the greatest ignorance of constructive science, so long as they show the passion and fervour of the artist. If the student be earnest, constructive science will enter in due course into his life and thoughts; and he will not be content so long as it remains unmastered.

At this stage of our subject a powerful consideration presents itself. The division of labour, which has ever more and more characterised the progress of the industrial arts, has gone on from age to age, subdividing all trades and professions, and creating an ever-increasing army of specialists. Thus, in the profession of architecture, we have thousands of practitioners devoting themselves exclusively to particular kinds of work; as, for example, to perspective drawing, to quantity surveying, to valuations and arbitrations, to levelling and land surveying, to the developing of building estates, to iron and steel erections, to the planning of factories, to the designing of churches, hospitals, workhouses, asylums, to works of sanitation, to bridges and roads, and to many other special kinds of work.

It might be possible that this steady growth of specialism in process of time would utterly disintegrate the great profession of architecture, leaving it in rags and tatters of its ancient grandeur, if no other process were in course of action tending to check and limit the disruptive labour-splitting agencies.

That in a state of advancing civilisation, division of labour is to a great degree unavoidable goes without saying. But in the case of our profession it is desirable that it be kept within bounds; for the degrading effect of unlimited division of labour on the dignity of the architect's vocation may be illustrated by the use in America of the meaner cognomen "house artist" in lieu of the grand old title "architect." Surely no right-minded member of our profession would not desire to resist this modern tendency towards the belittling and demeaning of our nobly comprehensive calling. Yet how can we successfully stem the great tide and keep the planks of the grand old ship still fast bound together, instead of permitting them to break adrift under stress of disruptive forces, and go tossing about in separate fragments, each on its own private account? It is in this endeavour to preserve the profession from such disintegration that the technical-school training may help us very greatly. From the necessities of the case, a building which is the production of many trades and handicrafts must have presiding over them one who comprehends them, and is able to direct them so as to produce by the harmony of their combined efforts an entirely satisfactory result. Thus, by virtue of his position, the architect becomes naturally the central person towards whom the constructive arts, trades, and handicrafts necessarily radiate. Each contributor to the great work of brick and stone and timber, slate and glass, &c., knows and understands his own part of the performance. But the architect must know, not only the parts, but the *whole*; for he it is who must guide and control the complicated machine of technical toilers, and must arrange and dovetail its human parts and members so as to produce a harmonious result in every building, great or small, "fitly framed together, and compacted by that which every joint supplieth"; and thus, thanks to him, the building becomes nothing less than a monument of the organised energy and skill of the multitude of skilled men.

There is no aspect of architecture in which it towers so greatly above all the contributory arts as when we thus recognise it as gathering them all under its headship, and uniting them in that common effort which results in a sublime building. But, in order that architects may qualify themselves to direct and control all the arts and sciences employed in the service of architecture, they will need to avail themselves more and more,

as time goes on, of all the help which the technical and art schools can render them.

In these schools there will be taught, with increasing force and clearness, as the educational system improves and gathers strength, those eternally true principles which constitute the very essence of art and science, and which unite all crafts by a most real and intimate consanguinity. In these schools the architect can learn to more strongly and clearly realise how the master-key of natural law opens all kinds of locks in the industrial arts and sciences. And it is by possessing himself of this master-key he can enter and govern every chamber of feeling and thought, and every department of skilled labour, in the great pantheon of industrial activities over which it is his true vocation to preside.

When the architect and the artisan have studied art, mechanics, and chemistry side by side in the night-schools, they will not afterwards work together the less, but the more successfully, the one in designing and directing, and the other in executing architectural undertakings.

When the building of the Houses of Parliament was commencing, Sir Charles Barry realised very keenly the need for night-schools, to brighten the minds and improve the skill of the carvers and masons and other young workmen employed in large numbers on the vast erection. An architect directing rudely trained workmen is like a conductor of an orchestra of unskilled instrumentalists. Neither the architecture nor the music can be of the best under such circumstances. How many a skilfully planned roof has suffered in execution from the badly fitting "cuts" of ill-trained carpenters; and how many a nobly conceived façade has permanently suffered from the wretched carving of novices, executed in too many instances from the execrable "original designs" of the architect himself, who, clever enough in planning and designing other things, is sadly too often utterly incompetent to either design or draw a piece of carving; and who is particularly deficient of power to design and draw the human form divine, a power he may acquire by diligent work at the art school, and a power without which he is greatly limited and belittled in comparison with architects, like the great Michelangelo, to whom the knowledge of the human figure was at once the base stone and the crowning stone of art. A comparatively few years ago it was notorious that the late William Burges was the only architect in England who could design and draw the human figure. The schools of art have done something to improve that disgraceful state of things; and they will do a great deal more. And when, ultimately, the architects of England no longer merit that reproach, it does not necessarily follow that the human figure will appear amongst our archi-

tectural decorations much more frequently than now; for the greatest linguists are not necessarily the greatest chatterers. But when the human figure is introduced it will be of great force and value as an architectural adornment, instead of, as too frequently now, a mere exhibition and exposure of barbarous incompetency. And while the superior art-training derived from the Government night-schools in this and in many other ways must eventually succeed in both purging and enriching the future architecture of England, Scotland, Ireland, and of our great and rapidly growing colonies, the technical education, now being everywhere added to such art-training, will simultaneously induce great improvements in structural methods and workmanship, the ultimate issues of which we in this age cannot well imagine.

In prospect of these hoped-for improvements and unimaginable changes of architectural style and method, which the advance of education promises in time to reveal, and while the future still hides in it these fruits of the new era now in bud, there is one thing we may confidently assert—namely, that, before such happy fruition is realised, the practising architects of the present day will no longer be to the front, and so will be spared the humiliation of seeing their proudest works discredited and outclassed by the new architecture, whose motive force will have been so largely augmented by the Government schools of art and of technical education.

You who are here to-night who are young—and who have so much to learn and to do—you, by the help of these splendidly organised schools, may and must increase; while others of us here who are no longer young, and who have learnt and done what we could with the much smaller aids at our command, must decrease. None the less do we rejoice that you young students enjoy opportunities which were not granted to us; and all the more we urge you to use them well; and in conclusion we would bid you, and those glorious institutions which are ready now to help you, God speed!

DISCUSSION.

The CHAIRMAN (Mr. Frank W. Rich), in moving a vote of thanks to Mr. Caws for his excellent Paper, urged that life was too short to permit an architect to become an expert

handicraftsman. To go through the shops of the various trades properly, the architect would need to spend about four years in each shop, and quite a working lifetime would be spent before the process was completed. Moreover, such a process was quite needless, as the young observant architectural student is able to take, as it were, a bird's-eye view of all the trades, and to acquire an excellent understanding of them, without himself becoming proficient in the use of tools. He entirely agreed with the Paper, that the first and foremost consideration of the architect must be proficiency in art. The teaching of the arts employed in architecture could be successfully carried on in the night-schools by able professors. But architecture proper could only be taught by an architect in good practice, and attempts to teach it otherwise must prove saddening failures.

Mr. J. W. TAYLOR [F.], in seconding the vote of thanks, thought it a good thing for a young architect to learn to use tools. He was afraid there might be some difficulty in carrying out the proposals of the Paper, that architect-students should work in the technical schools side by side with mechanics; for he understood that in some technical schools amateurs were not permitted to work with the *bona fide* mechanics. He deeply appreciated the high tone of the Paper, and the admirable ideal it advocated.

Mr. T. REAY supported the vote of thanks, and expressed his entire concurrence with the Paper, which he understood to contend that the young architect would do well to exercise himself physically in the use of tools at the schools, without in any degree withdrawing from his study of art, which was to be always the main consideration.

Mr. A. B. PLUMMER [F.] (Hon. Secretary) said he had a special reason for supporting the vote of thanks; for Mr. Caws had kindly hastened the writing of his Paper, and had read it a fortnight earlier than the date originally fixed, because the gentleman who was to have given a Paper that night had written a few days previously, that he found himself unavoidably prevented. Mr. Plummer added that in his opinion young architects might improve their practical knowledge by acting for a short time as deputy clerks of works.

The CHAIRMAN said he would prefer a competent clerk of works, trained in an architect's office, to one who had been simply a mason or joiner, because the architect took a more comprehensive grasp of all the trades, while the mechanic was liable to pay too much attention to his own trade, to the comparative neglect of the other trades.

Mr. J. W. HANSON, uniting warmly in the vote of thanks, spoke strongly in favour of architects undertaking the work of teaching in the Government night-schools those arts and sciences which particularly relate to architecture. He argued that they are naturally, of all persons, the best qualified for such duties.

In the course of the evening a vote was unanimously passed in support of the Report of Mr. Pearson, as architect of the proposed restoration of the west front of Peterborough Cathedral.





9, CONDUIT STREET, LONDON, W., 4th March 1897.

CHRONICLE.

Suggested Standard Size for Bricks.

At the Meeting of Monday, the 1st inst., Mr. Owen Fleming, pursuant to notice, moved the following resolution:—"That it be referred to the Science Standing Committee to consider the desirability of formulating a definite standard size for bricks." Mr. Fleming said the matter did not call for much explanation; it was simply an attempt to get rid of the difficulty that arose on works when bricks were used from different manufacturers in different parts of England. All members of the Institute knew these difficulties, and it was unnecessary to refer in detail to the troubles that ensued when facing bricks were, say, one-sixteenth of an inch longer than the body of the work. The question had been discussed by the Clerks of Works' Association and by other practical authorities on brickwork. It had therefore been thought desirable that the Institute should formulate some definite size that would be known in the brick trade as the Institute Standard; then the brickmakers would gradually adopt this standard as they laid down new plant. The difficulty, trouble, and cost now involved by reason of the present irregularity would then be greatly reduced. He did not know whether it was possible for the Science Committee to do as he had suggested, so he had brought forward his motion for their consideration. If they would accept it, something would be saved in the difficult work of building.—Mr. Francis Hooper [A.] seconded the motion, thinking it a very happy extension of the work already undertaken by the Science Committee in connection with the brickwork tests, and that it would be highly satisfactory if the Institute could take the initiative in so desirable a matter.—Mr. Fleming's motion was thereupon agreed to.

The Institute Conditions of Contract.

At the same Meeting Mr. Wm. Woodward [A.] asked permission to refer to the new Form of Contract issued by the Institute. There was, he said, considerable misconception in the minds of builders and architects with reference to these

Conditions. At the last Annual General Meeting he (Mr. Woodward) had stated that first-class builders absolutely declined to sign the new Conditions; and Mr. Slater and Mr. Edwin T. Hall had traversed his statement. He was then told that one eminent contractor had purchased fifty copies of the new Form. He wrote to that contractor, and was informed in reply that he had not purchased the Conditions. He, however, had just signed the new Conditions, but they had been so altered that most of the objectionable clauses had been removed or modified. He (Mr. Woodward) then wrote to the Secretary of the Association of Master Builders of London, asking whether or not his statement was accurate. That gentleman replied, under date 14th May, that the statement that the builders sign contracts based on the new Conditions was to the best of his knowledge quite devoid of foundation, and, further, that he knew of instances where they had been refused; and on its being pointed out to architects that the Conditions were not agreed with the Builders, they at once substituted the old Form. He (Mr. Woodward) had received a letter from Mr. Robert Williams, under date 27th February last, in which he stated that he had had an absolute refusal to sign the new Conditions by one of the largest builders in London, and he knew of other architects who had been similarly treated. According to these statements, the observation he had before made seemed perfectly accurate; and the best thing the Institute could do was to at once withdraw the new Form and revert to the old one, which were excellent Conditions, and answered every purpose. He was quite sure that if his suggestion were adopted architects would be relieved of considerable trouble, and the Builders' Association would be brought into harmony with the Institute.—The Honorary Secretary stated that since the new Form had received the sanction of the Institute nearly three thousand copies had been sold. He did not suppose they were all wasted.

Sessional Papers 1897.

The following Papers will be read at the remaining Meetings of the Session, at 8 P.M.:—

Mar. 15.—HERALDRY IN ENGLISH MEDIEVAL ARCHITECTURE. By Mr. W. H. St. John Hope, M.A., F.S.A.

Mar. 29.—HERALDRY OF THE RENAISSANCE IN ENGLAND. By Mr. J. Alfred Gatch, F.S.A.

Apr. 12.—A Paper under the management of the Art Standing Committee.

Apr. 26.—Special General Meeting.—THE NEW GOVERNMENT OFFICES SCHEME. By Mr. H. Heathcote Statham.

May 17.—THE PARTHENON. By Mr. F. C. Penrose, F.R.S.

It was intended to devote one evening only this Session for the consideration of Heraldry in connection with Architecture, but it was found impossible to do justice to a subject possessing so many points of interest, and extending over a long period of history, at one Meeting. The subject, therefore, so far as it treats of heraldry in its application to buildings in England, is to be divided as follows: Heraldry in Mediaeval Times, and Heraldry of the Renaissance. The two Papers will be illustrated by numerous lantern slides, many of which have been specially prepared for the occasion. As the subject has not hitherto been treated at the Institute in any systematic form, it is hoped that it will prove attractive to a large number of members and their friends. Cards of invitation will be issued on application. The Meeting of the 26th prox., it will be observed, is an extra Meeting, to be specially convened by the Council for the consideration of the important subject to be brought forward that evening by Mr. Statham.

Architects' Benevolent Society.

The Forty-seventh Annual General Meeting of the Architects' Benevolent Society will be held in the rooms of the Institute on Wednesday, the 10th inst., to receive the Treasurer's statement of accounts, to adopt the Report of the Council, and to elect members of the Council in the place of the five senior members who retire every year by rotation. It will also be the duty of the Meeting to elect a new Honorary Treasurer in the place of Mr. Arthur Cates, who, having served for seven years with great benefit to the Society, has expressed his desire to resign. It is hoped that there will be a good attendance of contributors. The names and contributions of new members will be announced at the Meeting.

The late Edward Howard Dawson [F.].

An Associate of great promise recently passed away in Mr. E. H. Dawson, of Warton Hall, Lancaster, who died last New Year's Eve, at the age of thirty-two. He was the son of Mr. E. B. Dawson, LL.B., of Aldcliffe Hall, Vice-Chairman of the Lancaster Quarter Sessions, and served his articles with Mr. G. B. Oliver [F.], of Carlisle. While studying for the Obligatory Examination he was a pupil of the late Mr. E. J. Tarver. He was elected an Associate of the Institute in 1888, and shortly afterwards commenced practice in Lancaster. He was entrusted with many important works, including the supplementary buildings at the Lancaster County Asylum, the Congregational churches at Grange and Carnforth, the additions to the Centenary Congregational Schools, Lancaster, and had just completed the designs for the Storey Home, intended to be erected by Sir Thomas Storey as an adjunct to the Royal Albert

Asylum. He also carried out the interior alterations in the courts and other rooms at Lancaster Castle, the additions and alterations to Warton Grange, and the new buildings for the Lancaster Banking Company at Morecambe, Carnforth, Blackpool, and Preston. He was an active public worker, being Chairman of the Parish Council at Warton, a member of the Lancaster Board of Guardians, one of the managers of the British School, Warton, Chairman of the Local Technical Instruction Committee, and President of the Warton District Ploughing and Hedging Association. Mr. Dawson married a daughter of Mr. E. Storey, of Croftlands, in December 1893. He was held in high regard, and his decease was deeply lamented in Lancaster.

Books received for Review.

Monograph on the Cathedral Church of Wells. By Alfred A. Clarke. Illustrated from original drawings by the author. Ordinary edition. Sm. 8s. 1s. 6d. net. Large paper edition, limited to 200 numbered copies, 3s. 6d. net. Wells, 1896. [Arthur Young, High Street, Wells.]

Addresses delivered to the Students of the Royal Academy, by the late Lord Leighton. 8s. Lond. 1896. Price 7s. 6d. [Kegan Paul, Trench, Trübner & Co., Limited, Charing Cross Road, W.C.]

Manchester Old and New. By William Arthur Shaw, M.A., Fellow of Owens College. With illustrations after original drawings by H. E. Tidmarsh. 3 vols. Large 4o. London, Paris, and New York. Price 31s. 6d. [Messrs. Cassell & Co.]

Ironwork, Part II. Being a continuation of the First Handbook, and comprising from the close of the Mediaeval Period to the end of the eighteenth century, excluding English work. By J. Starkie Gardner. With 134 illustrations published for the Committee of Council on Education. 8s. Lond. 1896. Price 3s. [Messrs. Chapman & Hall, Limited, 11, Henrietta Street, W.C.]

Ventilation and Heating. By John S. Billings, A.M., M.D. Large 8o. New York, 1893. Price 25s. [*The Engineering Record*, London office, 92-93, Fleet Street, E.C.]

Handbook to Gothic Architecture, Ecclesiastical and Domestic, for Photographers and others. By Thomas Perkins, M.A. 8o. Lond. 1897. Price 3s. 6d. [Hazell, Watson & Viney, 1, Creed Lane, Ludgate Hill, E.C.]

Quantity Surveying, for the Use of Surveyors, Architects, Engineers, and Builders. By J. Leaning. Third edition, revised and enlarged. 8o. Lond. and New York, 1897. [E. & F. N. Spon, Limited, 125, Strand; Spon & Chamberlain, 12, Cortlandt Street, New York.]

Additions to the Library.

A valuable contribution to the literature of Renaissance Art has been added to the Reference Library in M. Charles Yriarte's *Un Condottiere au XV^e Siècle. Rimini: études sur les lettres et les arts à la cour des Malatesta*, studies based on Italian archives and State papers. [Paris: Rothschild, 1882.] M. Yriarte devotes considerable space to the consideration of Alberti, the great Renaissance architect, and to the Tempio Malatestiano. The book contains 200 engravings.

Mr. James Neale [F.] has made a handsome

donation to the Loan Collection by the presentation of a copy of his well-known and exhaustively illustrated work on St. Alban's Abbey.

The National Sculpture Society, a society founded in New York with the idea of spreading the knowledge of sculpture and of promoting its use in the decoration of public buildings and other public places, have forwarded the articles of their constitution, the President's *Report* for the current year, and a memorial paper by Mr. W. C. Brownell on the work and life of the late Olin L. Warner. Mr. Barr Ferree [*Hon. Corr. M.*] is the Secretary of the Society.

From M. Charles Lucas [*Hon. Corr. M.*] has been received a paper read by him before the sixty-first Congrès Archéologique de France, held in 1894 at Saintes and La Rochelle, entitled *François Blondel, à Saintes, à Rochefort, et aux Antilles*, in which he gives some particulars regarding Blondel's executed works at the two first-named places, and some interesting information regarding his expedition to the West Indies.

Professor J. C. Raschdorff [*Hon. Corr. M.*] has presented *Der Neubau des Domes zu Berlin*, being a lecture which he delivered at the Berlin Industrial Exhibition last year; and *Dom zu Berlin*, being a collection of nine folio plates of the model for the Cathedral designed by Professor J. C. Raschdorff, assisted by Professor O. Raschdorff. At the International Art Exhibition held in Berlin to celebrate the 200th anniversary of the Academy of Arts, Professor J. C. Raschdorff, the architect of the new Cathedral, was awarded the International Gold Medal.

In the last number of the *Archæological Journal* (vol. liii. No. 212) Mr. George E. Fox deals with the "Roman Coast Fortresses of Kent," *Regulbium* (Reculver), *Rutupie* (Richborough), and *Portus Lemanis* (Lympne); and Mr. J. T. Micklethwaite contributes a lengthy paper entitled "Something about Saxon Church-Building," with plans, &c.

REVIEWS. LII.

(113)

ITALIAN ARCHITECTURE.—SIXTH TO ELEVENTH CENTURY.

Architecture in Italy from the Sixth to the Eleventh Century. Historical and Critical Researches by Raffaele Cattaneo, translated by the Contessa Isabel Curtis-Cholmeley in German. Illustrated. 4o. Lond. 1896. Price 21s. net. (T. Fisher Unwin, 11, Paternoster Buildings.)

The author of the work of which this is a translation, the late Professor Raffaele Cattaneo, was born in Rovigo in 1861. He evinced an early talent for drawing, chiefly of architectural subjects, and at the age of fourteen, whilst his schoolfellows were one day working at nouns

and verbs, he amused himself by minutely drawing in pen-and-ink and in twenty-four little squares the parts of the principal edifices of an imaginary city, symmetrically placed round its general view, its plan being also given on the back of the leaf. This drawing served as his passport to the Academy of Fine Arts in Venice, which he entered in 1876, studying there four years. He here displayed in his studies such imagination and originality in design, and so much indefatigability in his researches, that whilst still a pupil he was able to act occasionally as an efficient substitute for the professorship of Art History, and in 1880, when nineteen years old, had the diploma of Professor conferred on him. In the following year he designed and carried out the Gothic chapel attached to the Zanotto College in Treviso. The success of this chapel and various erudite essays which he produced brought him to the notice of the Papal Government, and he was selected to design and carry out the monument to the memory of Pio IX. in the crypt of San Lorenzo extra-muros in Rome. This and other works led to his receiving, first, the Cross of the Order of St. Gregory, following with the title of Knight Commander of the Order of Pio IX., and finally with a life annuity which was conferred on him only a few days before his death. He died of malignant smallpox on the 6th December 1889.

Though trained and practising as an architect, Cattaneo would seem already at a very early age to have devoted himself to the study of the archæology of his own country, and more particularly with that phase of it which elucidated the architectural history of the Church of St. Mark's at Venice. The last three years of his life were devoted to its constant study, and the work here translated must in some respects be looked upon as the preface to the great task he undertook when asked to write the text in Ongania's great work on St. Mark's. This he did not live to complete: but by way of preparation he published in 1888-89 the work of which this is a translation. The larger work, published in 1889, was edited by Professor Boito, from whose *In Memoriam* the particulars above given have been gleaned.

The title of his book, *Architecture in Italy from the Sixth to the Eleventh Century*, might have been called the *Influence of Byzantine Art in North Italy and Rome*, for the greater part of the text and illustrations are devoted to the analysis and minute examination, not only of early structures still existing, but of every fragment of ornamental sculpture which he was able to trace in the various lapidary museums of Italy. Cattaneo, who from the first was a most skilful and patient draughtsman, had, by the continual delineation of the details and ornament of the actual fragments, acquired such a knowledge of their design and execution that he was able to pronounce, not

only the period of their execution, but the probable source of their inspiration. It is from this point of view that his clear analysis, accompanied as it is by copious illustrations, becomes of the greatest service to those interested in the subject. Nothing

belonged to the ambo of St. Saviour, Brescia, and dated eighth century by Cattaneo—we have an example which, though inspired by and possibly copied from a Byzantine original, suggests an entirely different method of interpretation from



CAPITALS OF THE ANCIENT CIBORIUM OF ST. CLEMENT, ROME.

seems to have escaped him, so that we have a record, a catalogue *raisonné* of a very large series of artistic treasures, archaeological and otherwise, of the greater portion of which but few knew the existence. By the kindness of the publishers

that which is found in Byzantine Greek work. Here, probably, the Lombard artist comes in. Later on in Cattaneo's book, p. 321, fig. 159. Parapet of St. Mark, made by order of Pietro Orseolo I., A.D. 976, we find the Italian artist, though



FRAGMENT POSSIBLY BELONGING TO THE AMBO OF ST. SAVIOUR, BRESCIA.

reproductions are given of three of the blocks: Nos. 1 and 2, capitals of the ancient ciborium of the Church of St. Clement, Rome, A.D. 514-523, clearly due to a Greek chisel. The capital of No. 1 is placed on an ancient carved Roman shaft. In illustration No. 3—a fragment supposed to have

still inspired by Byzantine *motifs* has elaborated a style of his own. One of the most valuable parts of the book is devoted to a long dissertation on the Church of Sant' Ambrogio at Milan, ascribed by De Dartein to Archbishop Ansperto (868-881), but which Cattaneo proves conclusively

to be a work of the eleventh and twelfth centuries. The work concludes by an elaborate description, admirably illustrated, of the treasures at Venice and Murano, just hinting at the subject which Cattaneo proposed to take up in his next work, viz., the history and dates of the Church of St. Mark. He simply contents himself here with pointing out that the five-domed church, hitherto ascribed to the Doge Orseolo, 976, was not erected till 1063-70, by the Doge Domenico Contarini, and he gives a large number of illustrations of Orseolo's work, capitals, parapets, and other ornamental features, which, sculptured for Orseolo's restoration of the old basilica, and always recognised to be of his period, were subsequently used up in Contarini's domed structure.

The translation just published forms a sumptuous volume nearly twice the thickness of the original, with clear, distinct type, and with illustrations printed apparently from the same wood-blocks. It is unfortunate, however, that the translator or the publishers did not take the precaution of sending the proofs to an expert in English architectural terms. It is doubtful whether the translator herself quite understood the meaning of the terms in the Italian version, and in endeavouring to translate them literally she has not only coined an immense number of new words which are as yet unknown in the English language, but she has misinterpreted others. This being the first translation of any of Cattaneo's books in England, it was of importance that it should be rendered into intelligible English, so that those who desire to follow his arguments should not be obliged to refer to the Italian version to see what he meant to say. It would be impossible to give a tithe of the errors which abound throughout the work, but the following will give some idea of the trouble into which the translator has plunged the reader. The translator's version is in italics: throughout the work *absis* is used for apse, *little naves* for aisles, *apsidiales* for small apses, *semi-annular* for semicircular, *channelled columns* for fluted columns, *pilastrini* for stone posts, *broids* or the *interweaving of withes* for the guilloche pattern; p. 18, *wide lagoon* should be wide gulf. (The translator has misread *lacuna* for *laguna*.) Then, p. 45, *spindles* and *baquets* for beads and sunk panels; *narteci* for transept; p. 63, "*sgorbs*" for rubbish; p. 64, *closed trafori*, pierced marble slabs; p. 65, *cupola a spiechi*, dome on pendentives; p. 82, *fronton* for pediment or gable; p. 99, *casement*, socket; *antique corridietro*, ancient stone posts; p. 113, *cault of crosier pattern*, intersecting barrel-vault; p. 134, *the sheep that swear*, the blockheads that swear (the translator has mistaken *Pecoroni*: blockheads, for *Pecorini*: sheep); p. 154, *contour of gypes*, borders of foliage.

It will be well understood that with so many misconceptions of English architectural terms it

is very difficult to follow Professor Cattaneo's arguments.
R. PHENÉ SPIERS.

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ANCIENT COPTIC CHURCHES OF EGYPT.

The Ancient Coptic Churches of Egypt. By Alfred J. Butler, M.A., F.S.A., Fellow of Brasenose College, Oxford. 2 vols. 8o. Oxford, 1884. Price 30s. [Oxford University Press Warehouse, Amen Corner, E.C.]

It is almost necessary to explain the object of these two volumes by the following quotation from the author's Preface:—"The aim of this book is to make a systematic beginning upon a great subject—the Christian Antiquities of Egypt. Few subjects of equal importance have been so singularly neglected. One writer admits that the Coptic church is still 'the most remarkable monument of primitive Christianity'; another that it is 'the only living representative of the most venerable nation of all antiquity'; yet even the strength of this double claim has been powerless to create any working interest in the matter. No doubt the attention of mere travellers has been bewitched and fascinated by the colossal remains of pagan times, by the temples and pyramids which still glow in eternal sunshine, while the Christian churches lie buried in the gloom of fortress walls, or encircled and masked by almost impassable deserts. Yet the Copts of to-day, whose very name is an echo of the word Egypt, trace back their lineage to the ancient Egyptians who built the pyramids, and the ancient tongue is spoken at every Coptic mass. The Copts were among the first to welcome the tidings of the Gospel, to make a rule of life and worship, and to erect religious buildings; they have upheld the Cross unwaveringly through ages of desperate persecution; and their ritual now is less changed than that of any other community in Christendom. All this surely is reason enough to recommend the subject to churchman, historian, or antiquarian."

It may be supposed that this appeal will find a response from every real student, to whatever class of investigation he may belong. To the architect these ancient Coptic churches have a special claim on his attention; and his interest in them will not suffer by reading the two valuable volumes Mr. Butler has produced. He has evidently spared no time or careful study in acquiring the necessary material which fills his book. This material is so extensive and full of minute detail, it will become a valuable work of reference in the future.

As the author states, the Copts were early converts to Christianity, and their churches, on that account, must represent an early type of structure. Some of those at Old Cairo date their foundation as early as the third century. But there were earlier churches than these. Makrizi records the destruction of many of them in Alex-

andria, by order of Severianus, as early as 200 A.D., and now there is not a Coptic church in Alexandria. It is only in Old Cairo, the Natrun Lakes, and at various places up the Nile that they are found. This early date of these churches suggests that possibly there might be found in them traces of the form and arrangements of the first buildings that were constructed for Christian worship, and thus give us the solution of problems that yet remain doubtful. There is the basilica type, with questions related to it. The author expresses doubts about the usually accepted theory, and says:—"The Christian basilica had thus probably a non-Roman origin in Egypt and elsewhere." There is also the square or octagonal form of Greek churches, which is no doubt derived from another type. The apse and its origin is an interesting subject; * to this might be added the mihrab of the Mohammedan Masjid, the origin of which I have not, in my reading, chanced to notice any attempts to explain. Was it copied from the apse, or were both copied from some pre-existing model? The apse is a marked feature of the old Coptic churches; and in addition there is in almost all of them a niche in the apse. At p. 39, Vol. I., Mr. Butler has some remarks on the resemblance of this niche to the mihrab; he says it is "a striking coincidence," but does not attempt to trace the matter further.

In 1868 I was in Abyssinia with the expedition under Lord Napier; on the route going and coming from Magdala I visited and sketched many of the churches in that country. After my return I read a Paper at the Institute on "Abyssinian Church Architecture," which is published in the *TRANSACTIONS* for 1869. The Abyssinian churches are Coptic, and may be looked upon as an extension of the Coptic church of Egypt. The Abyssinian Abuna, or Bishop, was appointed by the Patriarch of Alexandria, and sent from that city, sometimes in chains, like a prisoner, as they at times objected to go into such a distant and uncivilised country, which was looked upon as an equivalent to banishment. As the Abyssinian churches are Coptic, they form a part of the subject which our author wishes to have studied. Mr. Butler traces Coptic churches, or the remains of them, as far south as Korosko and Abu Simbal; but they can be traced farther south than that. Ethiopia became Christian as early as the time of Justinian: this was the region we now know as the Soudan, and not Abyssinia, for it is supposed, on the authority of Edrisi, to have become wholly Mohammedan in the twelfth century. Queen Candace, whose treasurer Philip baptized,† ruled in Meroë, which

extends south, close to the present Abyssinian frontier; and we may conclude that at one time Christianity covered—probably, in a fragmentary way, in many spots—all the space from Alexandria to Axum and Gondar.

This being the case, the churches of Abyssinia may be looked upon as forming part of the subject, and I propose here to show where there is some resemblance, and where they appear to differ from the churches of Egypt. This is about the only criticism I can offer; and it may, perhaps, have the merit of adding something in the way of knowledge to the subject Mr. Butler is so desirous of seeing studied.

A comparison of the rock-cut church at Dongola,* with the plans of Coptic churches in Mr. Butler's book, presents a very striking resemblance. In this rock-cut church there are the three aisles, the middle one terminating in the east with a circular apse form, the other two being square. There appears to be niches in each of these, but they are not round. Salt gives the plan of a rock-cut church at Chelikut, which is very like this one; but the apse at the end of the aisles is in each case square. I have a rough sketch plan of the remains of what had been a built church. The foundations only exist now, at Agoola, and it seems, so far as one can judge, to have a similar plan to the others. The apses are square.

The Dongola church was dedicated to a favourite boy-saint of Abyssinia, and from him it is named Kados Kirkos: the date given of its excavation is 333 A.D.,† and its reputed founders were twins, emperors who reigned at that time, when Christianity was first introduced. One was named Atsbaha, "The Dawn," and the other Abraha, "The Light." That was information I received at the time from some one, but I cannot now recall the source, and consequently its accuracy may be doubtful; but it agrees with the traditional date which is given for the conversion of Ethiopia by Frumentius, the first Bishop. The Dongola church was explained as being three distinct churches, the nave forming the Church of St. Kirkos. The northern aisle is the Church of St. Mariam, and the south aisle the Church of St. Gabriel [see fig. 1]. This agrees with what Mr. Butler says of the Coptic church in Egypt: it "has always three eastern chapels, each with its own altar, its own entrance and its own iconostasis, and all standing in a line upon the same platform."‡ In the Church of Abu Kir wa Yuhanna, at Old Cairo, the "north side-chapel is dedicated to Al'Adra, and the south to Märi Girgis."§

In one of the churches of Old Cairo which I visited—with a friend who could speak the

* Professor Baldwin Brown has written on this subject, as well as the origin of the Basilica, in *From Schola to Cathedral*, published in 1886.

† Acts viii. 27. According to Alvarez, Queen Candace became a Christian, and resided in Abyssinia.

* Not the Dongola on the Nile, but a place with the same name between Adigerat and Antalo, in Abyssinia.

† Corresponding to the European reckoning of 325 A.D.

‡ Vol. I, p. 2.

§ *Ibid.* p. 259.

language—I made inquiries about another three-fold division, and understood from the answers that it was recognised in these churches. This division is on the line of the church from west to east. In the Russo-Greek Church it is described as the porch or entrance; the body of the church, where the congregation stand; and the Sanctuary. I still remember that I was rather particular on this point, and caused my friend to cross-question the

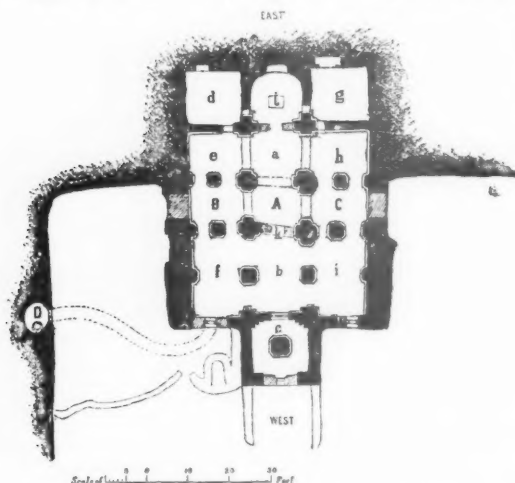


FIG. 1.—PLAN OF THE ROCK-CUT CHURCH OF DONGOLA.

A, the nave or central Church of St. Kirkos; a, the Makdas, or Sanctum; b, the Kudist; c, the Porch or Kuneh-Mahelet; n, the Northern Aisle or Church of St. Mariam; d, the Makdas; e, the Kudist; f, the Kuneh-Mahelet; g, the South Aisle or Church of St. Gabriel; h, the Makdas; i, the Kudist; j, the Kuneh-Mahelet; k, the Stone Tabût or Altar; l, dwarf wall separating the Makdas from the Kudist in the Central Church; m, Beatalelem or House of Bread.

people of the church. But it is quite possible that they may not have caught the exact meaning of the inquiries, but I have not noticed any mention of such a division in Mr. Butler's work; and, as he gives so many details, he would surely not have overlooked this.

My reason for asking about this distinction was because it is a very marked feature of the Abyssinian churches. In the Dongola church I was told that each of the three churches had this division. The Sanctuary is called the *Makdas*; * the priests only enter it. The second court is called the *Kudist*, and the outer court is the *Kuneh-Mahelet*, from a psalm or song, as the singers stand there.

The points of similarity between the Coptic churches of Egypt and these old churches of

* Many of the words used in Abyssinia in ecclesiastic affairs are Hebrew, or Arabic. *Makdas* is the same as the Arab *Muqaddas*, and the Hebrew מקדש, both meaning "holy" or "sacred." In the churches of Cairo the sanctuary is called the "Haikal," which is also Arabic and Hebrew, meaning a temple, or place of worship.

Abyssinia may be easily accounted for by the Abuna having been sent from Alexandria. The Cathedral church is at Axum, and, judging from illustrations, it appears to be rectangular in plan—in contradistinction to the round form which is peculiar to the South. This would also account for the square form predominating in the North.

The true Ethiopian church is supposed to be the round form which is found in the southern part of Abyssinia; and it is said to be derived from the pre-existing temples of the Falashas, or Jews (see fig. 2). The threefold division is understood to have been in imitation of the Temple of Jerusalem. The Falashas entered from the east, thus again following the rule of the Temple; and that, on the conversion of the Abyssinians to Christianity, they only changed the direction of the orientation, and made the door on the west.

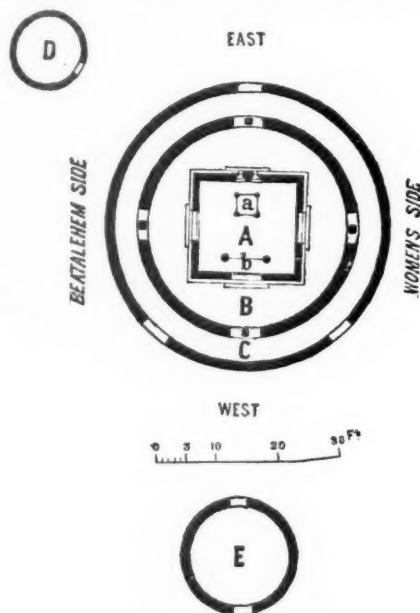


FIG. 2.—PLAN OF ROUND AMHARA OR SOUTHERN CHURCH.

A, Makdas, or Sanctum; a, Tabût, or Ark—the altar; b, the Veil; B, Kudist, or Second Court; c, Kuneh-Mahelet, or Third Court; d, Beatalelem, or House of Bread; e, Deja-Salaam, or Gate of Bowing-down. This last is the entrance to the enclosure within which the church stands, and the name indicates that an obeisance is made on entering.

There are Falashas still in Abyssinia; but I did not chance to see any of their places of worship. I made a sketch plan of one of these round churches which is sufficient to convey a fair idea of their arrangement.

The *Makdas*, or Sanctum, is square in plan, and built of solid material. The second court is in the form of a circle, which surrounds the Holy of Holies; and the outer court is also formed by

a circle, which encloses the other two. In the Makdas there is the Tabût, or Altar: it is concealed by a veil suspended between two posts, so that those standing at the west door, where they receive the sacrament, cannot see it. The entrance on the north side is called the "Beatalehem Door," because it communicates with a small house on the outside where the bread and wine—this last being only the juice of raisins—are prepared: to this house the priest and assistants go in their full vestments, and return with the elements, as a professional ceremony. The walls of the outer circles are generally formed of posts with wattle-and-dab, the whole being covered with a thatch roof.

Some have supposed that this rude circular structure is derived from the primitive African round hut. It certainly presents no appearance of affinity to the old Coptic churches of Egypt.

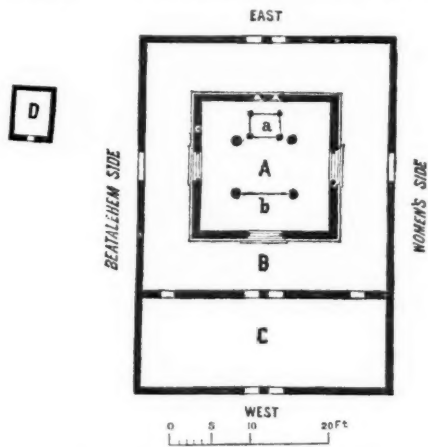


FIG. 3.—PLAN OF SQUARE OR NORTHERN CHURCH.

A, Makdas, or Sanctuary. a, Tabût, the Ark or Altar. b, the Veil. B, the Kudist, or Second Court. c, the Kunch-Mahélet, or Third Court. D, the Beatalehem, or House of Bread.

In Tigre, and the northern part of Abyssinia, we find in many of the churches a curious mixture of the two forms (see fig. 3). In the Church of St. Kirkos at Addigerat, the Sanctum is square and Abyssinian in its details; but the second court is also square, and the outer court is a narthex, or only a porch, on the western side. Although square, this is essentially after the Abyssinian type. On the other hand, in the Church of St. Miriam at Focado, the plan of the old churches of Cairo has been evidently followed (see fig. 4).

In the Abyssinian church the "Beatalehem," or Bethlehem, "The House of Bread," where the bread of the sacrament is prepared, is peculiar. Mr. Butler does not mention this name as being found in the Cairo churches; but their practice implies something very similar. He says that the

bread "must be baked in the oven attached for that purpose to most, if not all, of the sacred buildings." * It must be done by the doorkeeper, or sacristan, who has to chant fixed portions of the Psalms while doing so. There is no Epiphany tank in the Abyssinian churches, such as Mr. Butler describes as being within the churches at Cairo. On this festival the nearest stream is resorted to by the Abyssinian priests, who go in grand procession, with all the ecclesiastical paraphernalia, where, after the water is blessed, every one bathes.

There has been much ecclesiastical controversy about altars; and the subject is in some of its

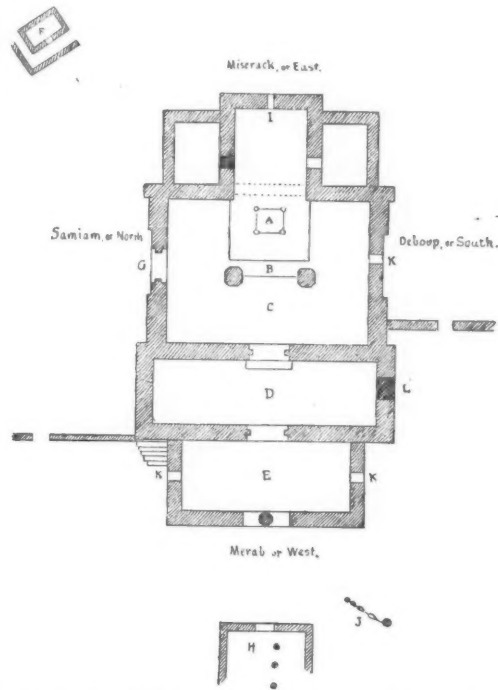


FIG. 4.—PLAN OF CHURCH OF ST. MIRIAM, AT FOCADO, ABYSSINIA.

A, the Tabût, or Ark. B the Veil. C, Makdas, or Holy of Holies. D, Kudist, or Second Court. K, Kunch-Mahélet. P, Beatalehem, or House of Bread. G, Deja Beatalehem, or Bethlehem Door. H, Deja Saliham, or Gate of Bowing-down. I, Gate, or Window of Light. J, Dowel, or Stone Bells. K K K, Windows. L, Women's Door, built up.

aspects rather obscure in the Coptic church. Writing of the altar in the Cairo churches and its character as a table, the author states that the Copts "are not apparently conscious of any such symbolism; nor do they commonly, if ever, speak of the altar as a table; although they do regard it under two other symbolical aspects, as representing the tomb of Christ and the throne of

* Vol. II. p. 277.

God."* Mr. Butler is undoubtedly a good authority on these churches, but here is another respectable authority—that is, Sir Gardner Wilkinson, who compiled an early *Handbook of Egypt* for Murray, and this is what he says on this head: "The Copts indeed have always had a *table*, considering that an altar would be a paradox after all sacrifice had ceased with the Saviour's death, and that the table of the Lord's Supper, 'in remembrance' of Him, was to take its place. They say, 'We gave up the altar when we gave up the religion of our pagan ancestors.'"[†] It may be safely guessed that both of these writers have not been quite correctly informed. Both the Eastern and the Western churches consider the altar to be an altar as well as a table, and the Coptic church is not likely to have differed widely on this particular aspect of symbolism.

Mr. Butler mentions "a wooden ark or tabernacle," which "is a regular instrument in the service of the mass, and at other times lies idle upon the altar."[‡] It is a cubical box, about eight or nine inches high, and it has a circular opening on the top, into which the chalice is placed, and the paten is placed over it, but rests on the tabernacle, as well as on the chalice, the rim of the one being the same height as the other. To this the author adds: "There can, I think, be no doubt that this tabernacle or altar-casket of the Copts is the mysterious 'arca' which has puzzled liturgical writers from Renaudot to Cheetham."[§] In this, from what follows, I understand he means the Tabût, or altar, of the Abyssinian churches. Many have blundered on this subject: Neale did, and I fear that even Mr. Butler has been led astray from not having correct accounts of this particular object. As I have had, when in Abyssinia, some of these Tabûts in my hand, and have made drawings of them, there is no difficulty in explaining their real character.

As Neale is an authority on liturgical matters, and as he is the authority which has led so many astray, I had better quote what he writes, because it will give a clearer notion of the whole question:—"I must here speak of that extraordinary appurtenance of the Ethiopic Church, the Tabout, or Ark. It is the belief of that Church that the original Ark is preserved in the Cathedral of Axum, and, in imitation of that, every parish church is also furnished with an Ark, which is preserved in the Sanctuary, and forms the principal object in ecclesiastical processions. The question of its contents is involved in mystery. It is absolutely asserted by Major Harris to contain nothing except a parchment inscribed with the date of the consecration of the building; but the

man who boasts of having employed Frank gold to bribe the priests to a discovery of a sacred mystery cannot wonder if he were deceived at last. In the prayer of consecration, which precedes the Ethiopic canon, after the dedication of the paten, the chalice, and the spoon, there follows a prayer to be said over the *Ark* to this effect: 'O Lord our God, who didst command Moses Thy servant and prophet, saying, Make Me precious vessels, and put them in the Tabernacle on Mount Sinai, Now, O Lord God Almighty, stretch forth Thy hand upon this Ark, and fill it with virtue, power, and grace of Thy Holy Ghost, that in it may be consecrated the Body and Blood of Thine only-begotten Son, our Lord,' &c. Renaudot professes his ignorance as to what this Ark is, but suggests that it may be a box for the reservation of the blessed Sacrament; and this at once explains the mystery which attaches to it, the reverence exhibited to it, and the place destined for its reception."^{*}

Major Harris was sent to Abyssinia on a diplomatic mission from India in the "forties": he landed at Tadjurah, and proceeded to Shoa, in the south, the country of the present Emperor Menelik. He had only seen the Tabût carried in processions, when it is entirely covered with richly embroidered pieces of cloth. If one of them had been uncovered to his view he would not have inquired as to what it contained, for it could contain nothing. Neither could it contain what was reserved of the Sacrament; for the simple reason that it is a solid substance. The Tabût is merely a slab of alabaster, marble, or Shittim wood, about the size of a quarto volume; when it is formed of marble it exactly resembles the altar-stone of the Latin church, the difference being that the Tabût has no hole for the relics. It is this preconception that it contained something, which has led to all the confusion regarding its character. The Tabût is in reality the essential part of the altar in an Abyssinian church. The bread and wine are placed upon it during the ceremony of consecration; and if Neale had paid attention to the prayer he quotes, it would have kept him from going so widely astray. I should suppose that it corresponds with the "altar-board" which Mr. Butler describes as being in the altar, and on which the consecration takes place in the Coptic churches. Neale mentions that some of the Syrian churches use a "slab of wood" in the altar instead of relics. I think there is a Tabût among the Abyssinian relics in the British Museum, which may be inspected by any one who is anxious of certainty as to what these articles are really like. A friend of mine has one that was brought home at the time of the Abyssinian Expedition: it is a solid slab of

* Vol. II. p. 2.

† *A Handbook for Travellers in Egypt*. By Sir Gardner Wilkinson, D.C.L. 8o. Ed. 1858, p. 289.

‡ Vol. II. p. 42.

§ *Ibid.* p. 43.

* *A History of the Holy Eastern Church*, by the Rev. John Mason Neale, pp. 185-6.

Shittim wood, with a cross carved on it. On one side is inscribed the name of the person it belonged to, and there are also the words, "10 and 2 Apostles and 4 Beasts." That is the Twelve Apostles and the Four Kerubic forms. The framework, which is formed of four posts and a shelf, which constitutes the altar in the Abyssinian church, is all included under the word "Tabût." The Tabût, or slab, which is the real altar, is not fixed, but merely lies on the *menber*, or shelf, and the reason for not fixing it is because it has to be taken out and carried in grand state in processions. It is the most sacred thing in the church.

WM. SIMPSON.

HOLYWELL PRIORY, SHOREDITCH.

THE LOST WELL.

The discovery in September last year of an old brick-steined well in the footway opposite No. 200 in the High Street* has revived interest in this ancient religious foundation, and given rise to a supposition that it is the actual well to which supernatural healing qualities were ascribed by the devout in the Middle Ages. The priory, which took its name therefrom, once occupied a site amid truly rural surroundings. Whatever outlying land it possessed, its walled precincts at all events were bounded on the east by the main road, or Roman way from the south coast of England to Scotland (the *Ermin Street*), afterwards locally named Holywell Street, or Holywell High Street, and finally Shoreditch; on the west side by a walk originally called "Ditch Side," but now existing as Curtain Road; while the south boundary was a lane called Holywell Lane (*alias* Holloway Lane), a name retained to the present day. The northern wall was probably on the south side of what is now Bateman's Row, but was known 150 years ago as Cash's Alley.

If this be a correct assumption as to the north (and it is the only side as to which there is a doubt), the area inclosed was rather less than eight acres. At all events, it seems clear that within this area the true position of the well must be sought; and as, unfortunately, there are not many records extant, a reference to the information available may be of interest—at least from an antiquarian point of view—in an endeavour to settle the question.

Of the well in High Street, which was found by the workmen of the Telephone Company and Vestry Electrical Supply, Mr. Lovegrove [4.] says (page 47, *ant.*):—

It has brick sides, and is evidently of ancient date, the covering being a few feet only below the surface. . . . That the well was used until a comparatively recent date is shown by the fittings found when it was opened.

From what is known of holy-wells in general throughout the country, and what is recorded of

this one in particular, a steined, and, I presume, deep, well cannot be the ancient spring which gave its name to the Priory, to the district, and the road; but more likely one sunk for the general and more convenient use of the hamlet after the original spring was rendered unsuitable for either curative or potable use.

The "holy-wells" of the Middle Ages were springs, rising to the surface at the junction of a permeable and impermeable stratum. They issued in many places on the grassy slopes to the north of the ancient city wall, and the whole district about here, especially to the south-west, was so marshy that it was called "*Fensbury*." The spring in question was evidently one of the most important which were frequented by the early citizens in their rural excursions.

Fitzstephen, writing at the end of the twelfth century, says* :—

There are also about London, on the North of the suburbs, choice Fountains of Water, sweet, wholesome, and clear, streaming forth among the glistening pebble-stones: in this number, *Holy-well*, Clerken-well, and Saint Clement's-well are of the most note, and frequented above the rest, when scholars, and the youth of the City, take the air abroad in the summer evenings.

This does not give the notion of a deeply sunk brick-steined well adjoining the great road.

Stow, writing 400 years later, in 1598, after enumerating the watercourses, springs, and wells in and around the City, says† :—

The first, to wit, *Holy-Well*, is much decayed and marred with filthiness purposely laid there, for the heightening of the ground for garden plots.

And incidentally, referring to another "well" close by, he continues :—

Somewhat north from Holy Well is one other well *curved* square with stone, and is called Dame Annis-the-Clear [afterwards, vulgarly, "Aniseed Clare"].

The position of this is clearly shown by several old maps as lying in a north-westerly direction, approached by a track from the north-west corner of the priory; and the description, that of a shallow tank curbed with stone, was no doubt equally applicable in its palmy days to the one which is the subject of inquiry.‡

In Dodsley's *London and Environs Described*, 1761, fol. 195, there is this reference—a paraphrase of Maitland's text five years previously :—

Holiwell, a fine spring; now choaked up with soil, and a hill of rubbish called Holiwell Mount near Shoreditch. This spring, in the times of popery, was famed for its miraculous virtues, and thence obtained the name of *Holy*. A little to the south of this well, but within its precinct, stood an Ancient Priory of Benedictine nuns [&c.]

* *Antiq. Rep.* 1807, vol. i. fol. 243.

† Strype, ed. 1720, fol. 50. Merley's ed. 1893, ff. 46, 47.

‡ "Perilous Pond" (recently, if not still, in existence as "Peerless Pool") is also mentioned. Maitland, long afterwards, describes this pool as having been lately formed into the "completest Swimming Bath in the whole world."

* *The Builder*, 12th September 1896.

With reference to "The Mount," it is to be observed that it is shown on one old map as west of Ditch Side, and therefore *outside* the boundary proper; consequently the "hill of rubbish" was most likely distinct from "The Mount" itself, which was, it is thought, an artificial eminence raised by the Parliament during the civil wars for defensive purposes. Neither of the accumulations could possibly have been choking up a well outside the eastern boundary, 250 yards away by the high road. Besides, the writer calls it "spring," which it is more natural to assume was not a brick-lined well, which, if in existence and use in 1761, would no doubt have been protected from risk of defilement.

Maitland himself in his *History of London* further says that *Seymour* had confounded it with Clement's Well,

whose remains are still preserved in Clement's Inn. . . . However, its Holiness has of late been opprobriously injured by Heaps of Dung and Soil, and the Water thereof employed in watering the Garden to which it belongs.

In Ellis's *History of Shoreditch*, 1798, the well is thus described (fol. 183):—

The name of this priory (as well as that of the liberty in which it is situated) is derived from a certain sweet, wholesome, and clear fountain, or well, which for the virtue of its water amongst the common people was esteemed "Holy," though since decayed. This well was originally situated on the eastern extremity of Finsbury Fields, as we learn from the charter of confirmation granted to this priory by King Richard the First, bearing date Oct. 7, 1189, wherein he confirms, *inter alia*, "Locum ipsum in quo prefata ecclesia sita est cum omnibus pertinentiis suis, scilicet Moram in qua fons qui dicitur Halinelle oritur."*

From this it would appear that the well was no longer open to view in 1798, and if the original "Ditch" had at this period been replaced by a sewer, under the road which took the place of "Ditch side," the spring was thereby tapped and had disappeared a hundred years ago. During the Main Drainage Works, however, in 1863, a great deal of water was met with in the cuttings, and the gravel was then doubtless permanently drained.

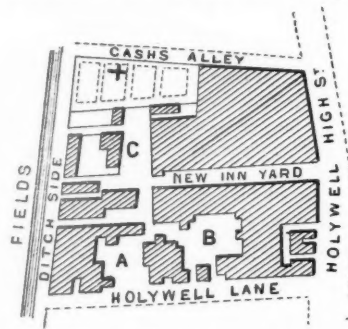
Mr. Hope, in his work *Holy Wells of England*, 1893, gives no further information, merely quoting the statement as to the spreading of rubbish to heighten the gardens. But he describes wells in other parts of the country at some length. The book corroborates the statement that scarcely any of these "Holy" wells were of any considerable depth, or otherwise bounded than by a low wall at the back, and perhaps also on two sides, with several steps down to the water on the front.†

* *Mon. Ang.* vol. i. p. 531.

† Of this kind was the "Shepherds' Well," which was in use for cattle some 35 years ago, in the "Conduit Fields," Hampstead. It was a spring on the south-west slope of the sandy cap on the Northern Height, which accounts for the Heath, and issued at the level whereat the clay

Sometimes they were covered in with a vaulted roof, and occasionally provided with a stone bench, altar, or shrine, and image of a saint, and ornamented outside with the arms of the donor. Dripping wells were occasionally so designated.

Turning now to the maps available, although there are several well-known older maps, I have



A, King John's Court. B, Holywell Court. C, New Inn Broadway (formerly King John's Court).

not found the well shown on any survey until that made in 1745 by Chasserau of the Parish of St. Leonard; but this map seems to settle the question definitely.

The buildings and open spaces within the area bounded by Cash's Alley (Bateman's Row), Holywell Lane, Ditch Side, and Holywell High Street as they then existed are shown on sketch; where, at the north-west angle, is a plot of garden ground, containing three roods, in the centre of which is indicated, by a cross, "Ye well from which ye Liberty derives its name."

Any traces of it which were then apparent to the surveyor probably disappeared in the fifty years which intervened before 1798, when Ellis wrote of the "original" situation of the well. At the present day the whole area is crowded with warehouses, small shops, poor dwellings, timber and other yards, and intersected midway by the North London Railway. Even 150 years ago it would seem that the residences of nobility and gentry which are said to have succeeded the Priory buildings had, in their turn, given place to a very inferior class of dwelling.

Bateman's garden plot is now occupied by a Board school and small and dirty houses, and crossed by New Inn Street and a court called New Inn Square—both streets formed since 1745.

The playground of the school abuts upon Bateman's Row; and it is between the east

subsoil commences. The rectangular basin had a brick wall on three sides, stone curb, and iron railings. Three or four steps led down to the water, which was shallow, partly filled with rubbish, and not at all inviting. The spring failed almost entirely after sewerage works were executed, and the site, now built over, is indicated by a tablet upon the boundary wall of the nearest house.

boundary wall thereof and the backs of the houses in New Inn Street, some 30 or 40 feet south of Bateman's Row, and 130 feet east of Curtain Road, that the exact position, according to this map, of the spring at which so many devotees believed themselves cured may be fixed. The Ordnance Survey places it a little further to the east under the houses, and *The Builder* rather more to the north-west. Therefore, in any case, the recent find opposite No. 200, High Street is deprived of all claim to remote antiquity or romantic interest.

EDWD. WM. HUDSON.

NOTES, QUERIES, AND REPLIES.

Architects and Reinstatement of Buildings after Fire [p. 174.]

From THOMAS E. MUNDY [A].—

In the *JOURNAL* dated 4th February 1897 I have read the report made to the Council by the Practice Standing Committee, and, whilst wishing to give all due credit to the members of that Committee for their well-meant energy, I cannot but express the opinion that the action taken by them was very ill-judged, and I consequently feel obliged to congratulate the members of the Institute on the non-success of the negotiations with the fire offices.

There are several members of the Institute closely connected with the insurance offices in respect to the settlement of building losses, and if the Committee had consulted those members before taking action in the matter, I venture to think they would have adopted a very different position.

Hitherto, although the fire offices have declined to accept responsibility for the payment of architects' fees after fire, the assessors have been left with a tolerably free hand to recommend them for payment—*e.g.*, in special cases, where there was a *bonâ fide* reason for so doing—but, as a result of the recent action, a general instruction has been given not to allow them without the special consent of the offices interested.

I would now draw attention to the fact that a very small proportion of the claims made against fire offices passes through the hands of architects, the very large majority coming through auctioneers, house agents, claim makers, builders, undertakers, house furnishers and decorators, drapers, upholsterers, &c.; and it should be borne in mind that the fire offices have no control in the matter, the owner of the property having a perfectly free hand to select (if he thinks it necessary to do so) the person to make his claim, and superintend the reinstatement of his property. If, therefore, the fire offices had accepted the proposal of the Practice Standing Committee, it would necessarily follow that the promiscuous persons

engaged in the above-named and other callings would find it to be to their advantage to advocate the claims under the designation of "architect." Inasmuch, however, as architects have no clearly defined legal status, the fire offices, having once accepted responsibility for architects' fees, would have no legal power of discrimination, but would be bound to allow the fees as a specific item on every claim made by a person calling himself an "architect."

Now, to go a step further. In the settlement of a fire loss there often exists a variety of interests, and in some cases the several persons interested employ their own agents. If, therefore, the fire offices recognise liability for the fees of the architect or agent employed by one of the persons interested, why not those of the architects or agents representing the owners of the other interests, thus making further, and surely unfair, additions to the claim, and opening the door to unnecessary complications?

Permit me to go a step further still. There are many property owners who decline to settle a claim against a fire office without the intervention of their solicitors, who sometimes ask for the payment of their fees; consequently, if architects' fees are allowed, why not solicitors also, with the same chance of multiplication in the case of varied interests as I have above suggested?

The present position taken up by the fire offices is a perfectly sound and equitable one—*viz.*, responsibility for the value of the damage to the building by fire—not that of indemnity against losses of any and every kind caused directly or indirectly by the fire; and in cases where, by reason of the character of the building, the owner anticipates the necessity of employing an architect to superintend the reinstatement in case of fire, he can easily cover that risk by insurance in the same way as he can that for the loss of rent—*viz.*, by an agreed upon amount specified for the purpose.

As regards the letter from the manager of the Imperial Assurance Company, laying down two principles (numbered 1 and 2 in report) as governing their action, it appears to me to be only a method of obtaining a cheap advertisement, and can mean nothing unless it be governed by the principles I have pointed out. I therefore anticipate the office mentioned will soon find out its mistake, and be glad to fall into line with the other offices.

Referring to the last clause of the report, I confess myself utterly at a loss to understand how the addition to a policy of a specific item covering architects' fees should tend to "undermine or weaken the rights of the insured as laid down in clause No. 2," as, on the contrary, it would place those rights beyond dispute, and the additional premium paid would exactly correspond with the advantage to be gained by the assured.

I make these remarks solely as a member of

the Institute in the interest of our profession, and not with the authority or on behalf of any fire office; but I have reason to believe that many members of the Institute share my views, and I venture to think that the Practice Standing Committee will commit a grave error if it makes any further attempt to disturb the present practice, which appears to me to be eminently fair and equitable.

M. Charles Yriarte and the South Kensington Museum.

From JOHN HEBB [F.]—

M. Charles Yriarte, Inspector-General of Fine Arts to the French Government, has addressed a letter to the Paris correspondent of *The Times*, a translation of which appears in *The Times* of the 1st of March, advocating the completion of the South Kensington Museum with a view to the accommodation of the Wallace Bequest to the nation, which will interest British architects. M. Yriarte, whose ability as an archaeologist and critic is well known in this country, while deprecating the intention of advising as to the architectural question involved, proceeds to deliver himself of the following exordium, which may perhaps be intelligible in the original, but appears to have suffered at the hands of the translator:—

"It is not for me," says M. Yriarte, "to give an opinion on the architectural work to be accomplished. South Kensington is especially a museum of study, and for study a mere box is sufficient, spacious, well lighted, with as few projections as possible, of no exaggerated height, easy of access, and above all with space and light; and lastly, from due respect for art, with decent surroundings, a fine entrance, and no unsafe neighbouring buildings. The architects will be unable to protest (why should they?). They know that in architecture the external expression of a requirement fulfilled, a form appropriate to the object aimed at (e.g., half a brick?) inevitably gives a monument its character. Ornament is neither in the material employed nor on the wall, where it sometimes distracts attention; it is especially in the art object itself, and imagination can find ample scope outside."

The translator's qualification for his task may be tested by the fact that he translates what is evidently intended for "the reproduction one-third full size of the bedchamber of Isabella d'Este, Duchess of Mantua," as "the model one-third size of the execution of the Camerino of Isabelle d'Este, Marchioness of Mantua"!

MINUTES. IX.

At a Special General Meeting, held Monday, 1st March 1897, at 8 p.m., Professor Aitchison, A.R.A., *President*, in the Chair, the President moved that, subject to Her Majesty's gracious sanction, the Royal Gold Medal for the promotion of architecture be presented to Mynheer

P. J. H. Cuypers, for his executed works as an architect. The motion having been seconded by Mr. William Emerson, *Hon. Secretary*, it was

RESOLVED that, subject to Her Majesty's gracious sanction, the Royal Gold Medal for the promotion of architecture be presented this year to Mynheer P. J. H. Cuypers [*Hon. Corr. M.*], Amsterdam, for his executed works as an architect.

The Meeting then terminated.

At the Ninth General Meeting (Business) of the Session held Monday, 1st March 1897, at the close of the Special General Meeting above referred to, Professor Aitchison, A.R.A., *President*, in the Chair, the Minutes of the Meeting held 15th February 1897 [p. 212] were taken as read and signed as correct.

The following Associate attending for the first time since his election was formally admitted, and signed the Register—namely, Frederick Chatterton.

A list of donations to the Library [see *Supplement*] was taken as read, and an expression of the thanks of the Institute to the several donors was ordered to be entered on the Minutes.

The following candidates for membership were elected by show of hands, under By-law 9, namely:—

As Fellows.

HENRY CLEMENT CHARLEWOOD [A.], (*Qualified as Associate* 1888), Newcastle-on-Tyne.

JOSEPH GIBBONS SANKEY, M.A.Cantab. [*Pugin Student* 1884], Manchester.

JAMES DIGGLE MOULD [A.], (*Qualified as Associate* 1888), Manchester.

As Associates.

HERBERT WILLIAM BIRD (*Probationer* 1891, *Qualified* 1896), Hong Kong.

CHARLES FREDERICK INNOCENT (*Probationer* 1889, *Student* 1894, *Qualified* 1896), Sheffield.

ALFRED EDWARD CORBETT (*Probationer* 1891, *Student* 1892, *Qualified* 1896).

STEPHEN POWLSON REES (*Qualified* 1896).

CHARLES HENRY DORMAN (*Probationer* 1890, *Student* 1893, *Qualified* 1896).

ALEXANDER GODOLPHIN BOND, B.A.Oxon. (*Probationer* 1894, *Student* 1895, *Qualified* 1896).

GILBERT WILSON FRASER (*Probationer* 1890, *Student* 1892, *Qualified* 1896).

DELMr. GEORGE MOOTHAM (*Probationer* 1892, *Student* 1893, *Qualified* 1896).

CLEMENT OSMUND NELSON (*Probationer* 1891, *Student* 1894, *Qualified* 1896).

RUPERT CLAUDE AUSTIN (*Probationer* 1892, *Student* 1895, *Qualified* 1896).

HENRY GEORGE FISHER (*Qualified* 1896).

CHARLES SAMUEL FREDERICK PALMER (*Qualified* 1896), *Arthur Cates Prizeman*.

On the motion of Mr. Owen Fleming [A.], seconded by Mr. Francis Hooper [A.], it was

RESOLVED that it be referred to the Science Standing Committee to consider the desirability of formulating a definite standard size for bricks.

Mr. William Woodward [A.] drew attention to alleged refusals on the part of some builders to sign the Institute Conditions of Contract, and urged that the new Form of Contract be withdrawn, and the old one reverted to.

A Paper by Mr. Leopold Eidlitz (of New York), entitled *THE EDUCATIONAL TRAINING OF ARCHITECTS*, having been read by Mr. John Slater [F.], B.A., the same was discussed, and a vote of thanks unanimously passed to the author.

The proceedings then terminated, and the Meeting separated at 9.45 p.m.

